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## Quite Grim

During one mild evening in late October 2004 I was just west of Gettysburg and the national military park bearing the same name, at an area where spotlighting was commonplace and, also, poaching.

Deputies Jim Nett and Bob Flohr were on patrol after 11 p.m., when lawful spotlighting hours ended, when they noticed a light coming from a pickup traveling down the road. Catching up to a small green Chevy, Jim activated his vehicle's lights to stop it. Instead of pulling over, however, the driver accelerated while someone else in the pickup shined a spotlight out the back window and directly into Jim's eyes, blinding him. Jim lost the vehicle and the pursuit ended. Bob could make out only the first three characters of the license plate -YMJ.

Unfortunately, running a vehicle check with just those letters was impossible. Talking about this occurrence later, we realized that none of us had ever experienced or even heard of a spotlight being intentionally shined into a pursuing officer's eyes.

Two weeks after the chase and in the same area, deputies Nett, Flohr and Ron Sadler met with me on a dirt road that connected Bingaman and Camp Gettysburg roads, about a quarter mile before those two paved roads intersected. The dirt road was on slightly high ground that overlooked a wide open area dominated by fields and interspersed with occasional houses.

As we stood there talking outside our vehicles, at about 9:30 p.m., we noticed a vehicle in the distance heading in our direction along Bingaman Road (which angled out to our left). A spotlight was cast out its passenger window, scanning the fields. We also noticed the light beam shine across a house and barn. As luck would have it, the vehicle, a small pickup, turned left onto our dirt road and proceeded very slowly. My intention was to flag the vehicle to a stop when it came up to us, and probably issue a warning to the occupants for spotting the buildings. I stood out on the road and waved my flashlight as the truck approached.

The pickup got within a few feet when it came to a stop, and I began to approach the driver from the side. As I advanced, the truck suddenly accelerated forward, almost running me down and coming quite close to striking the other officers standing on the opposite side of the road. As it sped past, I ran to my vehicle, but by the time I got moving, the truck had already turned left onto Camp Gettysburg Road, where its speed really kicked in. I activated my lights and siren while the truck continued to flee, and with the deputies' vehicles following behind me. As I began to close the gap with the pickup, the back window suddenly opened and a spotlight jutted out, shining into my eyes. Straining to see the vehicle in front of me while avoiding looking into the blinding light, I was able to stay with the speeding vehicle, which occasionally took a turn at an intersection.

Being fairly new to Adams County, I was unsure of the roads, and along with not being able to safely work my radio while concentrating intently on the pursuit, I was confident that the deputies behind me were keeping track of where we were going and talking with dispatchers. I heard Jim communicate the fact that the vehicle we were pursuing was definitely not the one he had pursued earlier. At the time I didn't have a moment to really think about it, but I later concluded that this was either the coincidence of coincidences, or I was dealing with the second of two related incidents.

Finally, after seven intense miles, much of which was through the Gettysburg National Park, the pickup slowed down and pulled over, at about the same time I could hear other sirens and see the flashing lights of local police officers converging to assist.

While getting the two people out of the vehicle, I was surprised to see that the driver was a young woman. The truck, we learned, belonged to the young man who was attempting to blind me, who I'll refer to as John Pixel. Both were in their late teens. When asked why he fled, John said he had a bow and arrows in the back of the truck, and didn't want to be caught in the unlawful act of spotlighting while in possession of an implement capable of killing big game. After securing evidence and being satisfied there was nothing more to the incident, we released the two pending a later date,

in which we would question them further and figure out what charges would be filed.

Some time later we met with John and his girlfriend, and both seemed genuinely remorseful about the stupid act they had committed. John unwittingly gave us a big break in the other case by telling us it was his older brother, Tom, who had given him the idea of spotlighting pursuing officers to get away. Because of their cooperation, and in no small part because no one had actually gotten hurt, we decided to forgo filing criminal and traffic charges and stick only with game law violations, which would cost them thousands of dollars and years of hunting license revocations. Next we moved on to the other case.

Deputy Jim Nett pieced together the vehicle's description with the partial plate from his earlier encounter, and matched it to that of Tom Pixel. Tom had already gained a reputation as a poacher, so Jim decided to sit on the information while he awaited new evidence that would implicate Tom in two other crimes. One was, on the surface, at least, a tagging violation, assessed from a photo of Tom posing with a trophy 8-point buck that was untagged. The other was based on a homemade video of a buck with a unique rack taken near Gettysburg in late summer, along with another photo of Tom with what was clearly the same deer, but with a Maryland tag attached.

Once we had all the information we needed, we set up a meeting with Tom, who had been told to come with the two sets of antlers in question. Tom Pixel showed up with his father at the Gettysburg State Police barracks, where we presented him with everything we knew.

For such a complex collection of separate offenses with several witnesses involved, we hoped he would confess to these crimes in exchange for some leniency. Tom, however, was resistant and cocky, and it was difficult to convince him of all the evidence we had against him. Finally, reality set in, as well as the rational persuasion of his father. Tom agreed to plead guilty to charges involving refusing to stop for pursuing officers, unlawful spotlighting, unlawful possession of deer, and not properly tagging a deer. Fines and costs totaled more than \$1,300, along with three years of license revocation.

Months passed, and by the following September, as Deputy Dan Gallegos and I were driving down the road where the Pixels lived, I ran into John Pixel, who informed me that Tom was still up to his poaching ways. He said I should go talk with his father, because Tom had some illegal wildlife parts in their shed.

We went to his dad's house, and although Mark wasn't home, John showed me some velvet antlers in a freezer inside the shed. I didn't want to touch anything until Mark was there, so I waited for him to arrive, and I suggested that John go home, to prevent any sort of family altercation from breaking out.

Then Tom arrived livid and ranting that he had been set up.

When Mark arrived, he was upset as well, but led me to the shed where we went through the freezer and discovered all sorts of frozen animals and animal parts, including domestic goat heads. The only items that were apparently unlawful were two velvet skull-capped antlers and the beard and legs of a turkey.

Tom denied knowing anything about these items, even though it was clearly established that just about everything else in the shed belonged to him. We seized the parts of the three big game animals and left.

We filed three charges of possession of big game, and Tom showed up in court with an attorney, apparently intent on fighting the charges. When he saw witnesses there to testify that he had killed the deer and turkey, he decided to plead guilty to two of the three charges (a deal was made so that the witnesses wouldn't be burdened for spending more time in court). He then had another \$1,000 in fines plus several years of additional revocation of hunting privileges. Still, his arrogance was unwavering, as judged by his smug grin and demeanor after the affair.

Another year went by and I was on my 13th hour of working on the first Saturday of the regular deer season, when I received a call from the state police. I was told a trooper had stopped a vehicle on a road near Cashtown, and that the occupant was a known poacher. I immediately suspected who this might be, and asked Deputy Gary Camus to head there, as he was closer.

When I arrived, there with Gary and a state trooper, was an irate Tom Pixel, with his girlfriend, and a dead deer in the back of her pickup. The doe had been hastily field-dressed, and had an entrance wound on one side and an exit wound on the other. Unbelievably, Tom claimed it was a roadkill he had picked up, as he was not permitted to hunt or even possess a hunting license.

We seized the carcass and charged both him and his girlfriend with possession of an unlawfully taken deer, to which they pled guilty. Also tacked on was another two years of hunting privileges revoked (as it stands now, Tom cannot lawfully hunt in Pennsylvania until 2015).

Since my first encounters with the Pixel brothers in the fall of 2004, John hasn't been in any trouble since. But judging by the way things have been going with his older brother, I have a strong inclination that we'll run into him again. It would seem that his prospects for successfully learning from his past are, shall we say, quite grim.

- *Darren David, Adams County WCO*

## Anatomy of a Shooting

**I shot an arrow into the air,  
It fell to earth, I knew not where.  
- Henry Wadsworth Longfellow**

AS BENNIE eased through the shadowed forest his heart began to pound. He could almost hear the blood hammering through his veins as his eyes scanned the horizon with slow and deliberate scrutiny. There had been reports of many big gobblers here, and he had spent a sleepless night in anticipation of this day. In his late 40s, he had hunted most of his life. Turkey season was special, though. No other game excited him more.

Suddenly, a turkey exploded from a branch above him. Bennie quickly shouldered his gun as the huge bird rocketed through the dim forest, skirting trees with the faultless precision of a heat-seeking missile. Too late for a clear shot, Bennie watched the gobbler break through the woods and set its broad wings, disappearing into the next hollow. He stood on his toes, eyes straining to see precisely where the bird landed, and then moved on in eager pursuit.

James, dressed in full camouflage, had been sitting patiently in the hollow for more than an hour. He was a big man: 6-5 and a solid 250 pounds. His broad back rested against a great white oak. When the turkey landed James began to work his magic on the trusty box call he'd used so well over the past 20 years. This was the moment he'd been waiting for, he thought. It was going to be a good day. Ah, yes, a very good day indeed.

Bennie ignored the trees lined with "No Trespassing" signs as he crept eagerly into the hollow. After all, who would know? He hadn't seen a soul all morning. Besides, sweet success was so close now. He could hear the turkey up ahead. Surely it was the one he had just flushed. It was making a low, clucking call. Advancing toward the bird with great stealth, he couldn't help but anticipate the stares of wide-eyed admiration from his friends upon returning home with his trophy. He was close now. Very close.

The clucking came from behind a white oak just 20 yards ahead. His eyes bored through the tree for a glimpse at his prize. Ever so cautiously he brought the 12-gauge to his shoulder. The turkey would surely soon show itself, and it would be a clear shot from where he stood. This time it wouldn't get away.

James stopped calling and froze. A movement, followed by a sudden glance of light, caught the corner of his eye. It was just over his right shoulder. Curious, he turned his head for a better look. His camouflage clothing blended with the oak and its surroundings, rendering him all but invisible, but his darker facemask "came alive" as he turned his head, the mottled pattern transforming into the feathers of a turkey.

Bennie fired, striking James in the face, neck and shoulder. The powerful blast lifted him off the ground, taking many of his teeth and narrowly missing his eyes. James fell to the forest floor, screaming in agony, but all Bennie heard was the rasping yelp of a turkey in distress. While pumping another magnum round into his shotgun, Bennie ran recklessly toward his "prize." Then he stopped dead in his tracks, struck with the sick realization that he had shot a human being.

As a WCO for 32 years, an important part of my job was investigating shooting incidents. Although an unpleasant task, due to the human tragedy surrounding most cases, it was also very interesting work. Investigating a shooting incident can be intriguing: What caused it? How could it have been prevented? Was it an accident occurring by mere chance, or did it develop from sheer negligence?

I learned over the years that most hunting-related shooting incidents are caused through negligence, often fueled by the hunter's intense desire to harvest a game animal. And, unlike many may suspect, it's not the inexperienced hunters who are responsible for most shooting incidents. In most cases the

offender is someone who has hunted for many years, and he is generally hunting with a shotgun, in broad daylight, for turkey or small game when it happens.

Unfortunately, there will always be some who measure the success of a hunt only by what they bring home. Return without game, the day is a loss they reason. The wise sportsman chooses his hunting companions carefully, avoiding those who consider a hunting trip nothing more than an opportunity to prove they're the best "hunter" around. Such individuals are too quick to pull the trigger, and as we all know, there is no eraser on the end of a firearm. One tiny movement of your index finger can change your life forever.

The incident that opened this article happened several years ago. I was shocked when Bennie admitted reloading and running toward James after shooting him in mistake for a turkey. But his admission reinforced a belief I've held for many years: People who shoot someone in mistake for game didn't see a true picture of their surroundings. Instead, they perceive mental images that they want to see, and believe they see, due to a strong desire for "success." These perceptions are reinforced by a logical chain of events - actual happenings - that bolster their convictions right up to the precise moment they pull the trigger. In other words, real events blend with the imagined, producing mental images that are projected much like a video on a TV screen.

Many cognitive psychologists claim that as we go through life we create a mental blueprint of how things should work for us. That is, we sense the real world around us, but our sensations are based on individual and unique perceptions of our surroundings. Simply stated, we perceive (recognize and interpret) happenings based on what we believe rather than what is actual. Interestingly, psychologists assert that human perception is complicated by technologies, such as camouflage, citing the example of peacock butterflies, whose wings have eye markings that birds react to as though they belonged to the menacing eyes of a predator. In humans this reaction is called imagination, which is our innate ability to create partial or complete imaginary worlds within the mind from sense perceptions of the real world. These realms or images are seen with the mind's eye.

I'm convinced that if every hunter practiced two basic rules of safe hunting, no one would ever be shot in mistake for game. The first is to Positively Identify Your Target. As detailed above, under the right circumstances your mind can play tricks on you. And while the psychology of human perceptions can be difficult to grasp, we are all familiar with common optical illusions, such as paper drawings with figures that seem to "move about" or that appear 3-dimensional when you know, in fact, that they are not. Have you ever mistakenly identified a tree stump or a rock for some kind of game animal? I have. It's a common optical illusion that most of us have experienced at least once in our lives.

Although most hunters are careful and take plenty of time to absorb what they see, some don't. They simply react. As a result, humans are shot in mistake for game each year, bringing tragic results to both the victim and offender.

Therefore, it is imperative not only to positively identify your target as a legal game animal, but also to Be Seen. To accomplish this, you must take measures to stand out from your natural surroundings. Fluorescent orange has proven to be extremely effective in protecting hunters from being shot, especially in mistake for game. For that reason, whenever the law allows you to remove your orange clothing after reaching your calling position, you should always display a fluorescent orange alert band nearby, especially if you plan to call or use decoys. It may save your life.

In fact, in every incident I investigated in which a hunter was shot in mistake for game, the victim was posted in a wooded area, dressed in full camouflage, and failed to display any fluorescent orange material.

An additional contributing factor to these shooting incidents was the victim's movement, however slight, as in the incident above. Consequently, if you sense another hunter is coming your way, you must remain motionless. Always suspect he may be stalking you. Do not wave (especially your orange hat, which can be mistaken for turkey wattles) at him as a signal. Instead, shout "Stop!"

Make sure he's aware of your presence and that he is safely relocated before resuming your hunt.

Statistics show that the number of hunters shot in mistake for game ranks second only to those shot in the line of fire, with negligence upon the offender being the primary factor behind those incidents as well. Line-of-fire shootings are more difficult to protect yourself from because, in some instances, heavy brush and hilly terrain make it impossible for anyone to see you even if you're wearing fluorescent orange clothing from head to toe. Hence, the good hunter is always conscious of what lies beyond his target, and refrains from shooting at game on horizons. But I have investigated many line-of-fire incidents where hunters have been shot at close range while in plain view of the offender. In these cases, even a simple orange hat could have prevented the incident.

I will never forget one case where a hunter shot his companion while both were standing on the opposite sides of a small pond. The men were hunting together when they spotted several ducks on the water up ahead. Deciding to split up, they circled opposite sides of the pond, and when the ducks lifted off, both men stood directly across from each other with shotguns at the ready. Nothing but 40 yards of clean air and a few mallards separated them when one fired. The victim, in plain view, was struck from his neck to his knees with approximately 70 pellets. The offender claimed he never saw his partner, even though he was in plain sight.

Inexcusable as they may be, line-of-fire incidents like this occur because the offender sees his target, and nothing else. Science has shown that instances of intense, psychological emotion can trigger the onset of tunnel vision, causing one to sharply narrow his field of vision (or focus) to the point that he is visualizing his surrounding conditions and circumstances as if looking through the scope on a hunting rifle.

This may explain how an overzealous hunter can shoot someone who is plainly visible and in his line of fire when his sole objective is to bag a piece of game before it gets away.

Several years after the duck hunting incident, I investigated a similar shooting incident that involved two brothers. It was archery season and the men were hunting together in an area mixed with dense shrubs and saplings. They split up; one going north while the other worked his way south.

A short time later the older brother, Ben, saw two deer. He raised his bow and took aim, following their course as they ran through an opening to his left. The bigger deer in the lead, Ben took aim and quickly released his arrow before the trophy buck disappeared. His arrow missed, though, sailing just over the deer's shoulder. Although a mere 50 yards separated them, Ben never saw his brother John standing in plain view on the other side of the deer. Ben's razor sharp broadhead plunged into John's left bicep, severing his brachial artery and penetrating into bone.

Horrified by his brutal injury and in a state of severe shock, John immediately grabbed the shaft and ripped the arrow from his arm. This caused him even more physical damage, because the wedge-shaped arrowhead only enlarged John's wound as it backed out of his flesh, leading to a much greater loss of blood.

Hearing his brother's screams, Ben dropped his bow and ran to him. He almost blacked out when he saw the gaping hole in John's arm. Blood was spurting in great, crimson arcs and Ben knew at once that his brother was rapidly bleeding to death. Luckily, the men were hunting only 300 yards from a hospital. Ben could see a sign through the trees ahead of him that said "Emergency Entrance." It was his only chance. But John was fading fast and the short distance through the woods soon became an ordeal, as Ben was forced to support his brother's full weight as they stumbled over fallen branches and other obstacles along the way.

The five minutes it took to clear the woods seemed an eternity. And when their feet finally touched macadam Ben realized they had made the remote parking area, but the hospital still loomed in the distance. John's body, soaked in blood, had become so limp that Ben could scarcely hold him any longer. And for a brief minute he almost gave up hope. Then, suddenly, there was the blare of a horn. Ben's head snapped to his left. A car almost touching him. And a woman appeared beside him,

helping him drag his brother back to her vehicle. They raced to the emergency entrance and within seconds doctors and nurses swarmed around them from every direction.

When I interviewed the surgeon who operated on John for five long hours, he told me that John was alive only because they had been so close to the hospital, and had it not been for the woman in the car, he probably would have died anyway. But then, had a few common hunter safety tips been followed, there would have been no trip to the hospital in the first place.

Just like the duck hunters, Ben and John had consciously put themselves into each others' zone of fire. This is never a good idea. And in both instances, both offenders focused entirely on their targets without consideration to the area beyond. This is inexcusable no matter how you look at it, but in both instances the victims broke no laws. If they'd been wearing even a minimal amount of fluorescent orange clothing (as in most cases I studied over the years) there is a good chance they would never have been shot.

In the three decades that I spent investigating hunting related shooting incidents I learned that seasoned hunters, sometimes with 40 or more years experience, are often the ones who end up shooting another human being. And while I've heard every imaginable explanation and excuse for why these incidents occur, the one thing I never heard anyone say is, "I knew this would happen to me one day."

It's my sincere belief that those who think they are incapable of such a mistake are most likely to err, by mere fact they are so certain. Fact is, it can happen to you. It can happen to me, too, but only if we believe it can't.

- *William Wasserman, Retired WCO, Wyoming County*

## Elk Calf Survival

COW ELK give birth about eight and a half months after they've been bred. In Pennsylvania, that means that around the second and third weeks of June the Northcentral part of the state is "flooded" with elk calves. I was lucky enough to return to the elk range during that time and join PGC biologists, technicians and other staff as they collared two calves for the latest elk calf survival study.

### FINDING AN ELK CALF

To find an elk calf, first you need to know something about its mother. During the early 1990s, when Game Commission biologists were first studying elk calf survival, they learned that cow elk not only move away from the rest of the herd prior to calving, but that they also move less. Once secluded, a cow will continue to use a smaller area until her calf is fairly mobile. As a calf grows larger and stronger and is able to follow its mother farther, the cow will use larger and larger areas.

### THE HIDER STRATEGY

Biologists would say "females disperse prior to parturition" - that's what I call biospeak - it means that before a cow gives birth, she must first chase off her offspring from the preceding year and move away from the rest of the herd.

This is the only time that a cow isolates herself. If she were to stay with the herd or her yearlings were to follow her, she risks being seen, heard and smelled by predators, so she moves somewhere less conspicuous, somewhere presumably, that other elk and predators do not frequent. She will even lie flat on the ground to avoid being seen.

Cows may leave their herds up to five days before giving birth, though some do not disperse until the day of giving birth. Some cows will return to the same general area each year to have their calves.

After parturition, the cow removes all evidence of birth. She consumes the placenta and umbilical cord, along with any vegetation or earth soaked with blood and fluid, then thoroughly licks the calf clean before allowing it to hide. She also ingests feces and urine.

The newborn calf does everything it can to avoid detection; it's called the hider strategy - a method employed by some species to increase their likelihood of survival.

The calf chooses its own hiding places, crouching and freezing when it is threatened, and spends its first few weeks motionless and hiding while the mother feeds and when she flees from danger. The calf's spotted coat and near-scentless body help to conceal it from predators.

The mother minimizes contact with her new calf, to avoid attracting predators, and unites with her calf only sparingly to suckle it. The pair stays in seclusion until the calf outgrows its vulnerability and is mobile enough to assume the anti-predator strategies of adults, such as gathering with other elk in open fields, outrunning danger and relocating to areas clear of predators rather than hiding.

### FINDING A COW READY TO GIVE BIRTH

Cows that have previously been collared with radio transmitters make up the bulk of animals observed exhibiting pre-calving behavior, simply because biologists know where they are. Those cows are monitored several times a week all year long and daily during calving season. When a collared cow moves away from her herd and stays in the same place for several days, rather than moving the typical half-mile to mile a day, biologists pay close attention. Likewise, when an unmarked cow that has isolated herself is observed, biologists monitor her movement to see if she is staying in the same area day after day.

Along with a cow's restricted movement, biologists also look for milk production. Roughly two to three days before she gives birth, a cow's udder will enlarge and become very conspicuous. Once she has had the calf, her behavior will change also, though she will show typical signs of nervousness and be very alert when humans appear, she will exhibit a reluctance to leave the area because of her calf

and is thus more approachable.

### **A NEWBORN CALF**

Newborn calves can weigh 40 pounds or more. At about 20 minutes of age they can stand and within an hour have begun to nurse. They may gain up to two pounds a day. Young calves are slow to their feet, not terribly coordinated, and lack both the endurance and strength to avoid predators; their method of defense is to avoid being detected in the first place. In the event a calf is discovered by a predator, the cow will often attack or attempt to redirect the predator's attention to herself and then relocate her calf.

A calf may bleat to its mother to alert her that it is in danger. A cow may also issue an alarm bark to signal an imposing threat. Depending on the calf's age, such a bark could trigger a prone response - biospeak for lie flat and freeze - or for older calves, to run to their mothers or flee with them.

If a calf survives its first three weeks it will not only have the increased protection of the herd it has joined, but it will also have matured enough to be able to escape and outrun most predators.

### **CATCHING AN ELK CALF**

Biologists can determine which cows are going to have calves, but they still have to find the calves and catch them in order to radio-collar them for the survival study. After a calf is born, biologists have only a few days to try and capture it. Once a calf is five days old, it is very mobile and able to outmaneuver biologists.

When a biologist believes that a cow has had her calf, a search team is assembled at the location. The team spreads out into a long line and walks slowly through the light dappled woods and forest openings, searching the ground for a "frozen," curled up, spotted calf. The team covers the area in a grid pattern until the calf is discovered or the search is abandoned.

When a team member finds a calf, he backs off slightly and quietly and quickly brings it to the attention of the rest of the team, which then gathers around in a large circle in case the calf tries to run. Jon DeBerti, PGC elk biologist, his technicians and graduate students from Indiana University of Pennsylvania approach the calf with their supplies. Most often, the calf's inherent response to lie flat and frozen works in the biologist's favor. DeBerti and his techs are able to walk right up to many calves and get a hold of them without too much commotion. The instinct to freeze is so intense that sometimes when a calf is moved a few yards to a location that is easier to work from, its body stays rigid in the position it was "frozen" in on the ground.

Immediately DeBerti gets to work determining the sex, age and weight of the calf. To determine the calf's age, DeBerti first checks the size and condition of the umbilicus - the part of the umbilical cord that is still attached to the calf. Initially, several inches of the fleshy umbilicus are left on the calf, as days pass, the umbilicus dries, deteriorates and scabs over to a small button. By day seven only a small scab remains, if that. DeBerti also looks at the calf's hooves. When a calf is born, its hooves are opaque but they quickly begin to darken until about day five, after which they don't change much. As the calf moves around on foot, it also wears away a soft portion of the hoof that is soon worn away completely. DeBerti can use wear and the color of a calf's hooves to help determine its age. Also, if the calf's mother is a marked animal and they know how long it has been secluded and using the area, that information can help determine the age of the calf. Lastly, DeBerti uses the calf's mobility to help him determine its age. Generally, the younger the animal, the less it moves. Calves that are four to six days old have a higher tendency to run before the biologists can get to them and older calves also tend to get up and move right away after being released rather than return instinctively to the prone position.

Calves are then weighed by placing them in a nylon net, attaching the net to a hand held scale and lifting the scale into the air until the calf is free from the ground and any obstructive vegetation.

Blood is drawn to gather information on the general health of each calf. Mineral levels, platelet and white blood cell counts and other blood counts will be useful in the event of a calf's death. Such

information could be a piece of the puzzle in determining the cause.

DeBerti then slips a radio collar onto the calf's neck and fastens a numeric tag to its ear. The collar is elasticized in order to grow as the calf does and slowly disintegrates and drops off before the calf outgrows it completely. The ear tag is impregnated with antibiotics to keep infection at bay.

The calf's hiding spot is flagged and marked with GPS coordinates to help monitor the movement of the cow and new calf to determine how many days elapse before the pair makes a significant movement away from the area. IUP graduate student, Melia DeVivo, will return to each site to conduct a detailed habitat assessment and learn about the habitat needs of elk calves.

Of the 29 calves DeBerti's team caught this year, 28 were radio-collared. Fourteen were male and 15 were female. The calves ranged in age from 30 minutes to, at best guess, eight days, the average being three days old.

The average weight for the calves caught in 2007 was just over 43 pounds. DeBerti believes that is indicative of a healthy population. The likelihood of survival decreases dramatically for calves weighing less than 25 pounds.

### **THE CALF SURVIVAL STUDY**

Game Commission staff and Indiana University of Pennsylvania's Dr. Larkin and his students are conducting the research on elk calf survival. They are radio collaring calves and had intended to monitor the young elk for 18 to 24 months. Most of the collars, however, are dropping off at about 14 to 16 months. The project originally started as a 3-year study - this being the third year - but DeBerti and Larkin are hoping to stretch it one more summer, to try and get collars on 100 calves; they've collared 65 so far.

Radio-collared calves are monitored several times each week throughout the study. When a collar stops moving, because it has dropped or because the calf has died and is, therefore, no longer moving, it begins to transmit a mortality signal. The mort-mode sounds different to the technicians picking up the radio-signal. When a mortality signal is detected, technicians track down and retrieve the collar and, in the case of a death, collect information to help determine the cause.

In the 1990s, when the survival of elk calves was first studied in Pennsylvania, 30 calves were monitored. Then the elk herd was about half the size it is now and elk inhabited a much smaller area of the state. Now that the herd has doubled in size, it has expanded into areas where black bear densities are higher. That's important to elk biologists because in western elk populations black bears are a common predator of calves.

In Pennsylvania, black bears don't appear to be an issue for elk. In fact, none of the 65 calves monitored during this study have been killed by bears and only one calf in the earlier study succumbed to a black bear. The bears in Pennsylvania seem to be more interested in white-tailed deer fawns than elk calves, perhaps because fawns are more available. There are more fawns and, unlike out west, elk do not concentrate in calving grounds where bears can concentrate their search efforts for food.

During the latest calf survival study, biologists were hoping to be able to learn about yearling survival, but the collars have been dropping before the calves get that old. DeBerti and Larkin want to know how many calves survive, to what age they survive, and how many calves it takes to produce a mature bull for hunting and viewing or a cow of prime productive age. The information biologists learn will be important in adjusting hunting license allocations to manage the elk.

In the 1990s, the 30 radio-collared calves were monitored every 24 hours during the 4-year study. Most mortality occurred during a calf's first 65 days of life. Six calves died: two from bacterial infections, one from brainworm, one drowned, one was killed by a black bear and one was poached. Twenty-two calves were collared in 2005, 15 in 2006 and 28 in 2007. So far, there have been seven deaths: one was killed illegally, one was legally harvested, one died of pneumonia and the cause of

death for four was not determined.

## **MEASURING SURVIVAL**

Measuring survival is a little tricky. It can't be measured as a simple percentage of how many lived compared to how many were in the sample, as if all of the animals were followed starting at the same time, for the same amount of time, and all received the same amount of follow-up. In the real world, it takes time to accumulate the intended sample size of animals, sometimes it takes years. In the medical fields, for instance in cancer research, it could take decades to accrue a sample of patients. And, sometimes animals (or patients) drop out of the study and are no longer monitored because they've lost their collar (or removed themselves from the study). Because each animal is monitored for a different amount of time and they don't all receive the same amount of follow-up, a simple percentage isn't quite accurate.

To account for the addition and removal of "patients" over time, scientists commonly use something called a Kaplan-Meier survival curve to generate survival estimates. The Kaplan-Meier method accounts for animals being added to the data set - as more calves are born and collared each year - and for those being removed from the data set - in the event that an animal loses its collar. The Kaplan-Meier curve allows an animal to contribute to the data set for the entire time it was monitored during the study. Thus if an animal was collared in the first year and was alive when it lost its collar during the second year of the study, the fact that it lived for at least a year is part of the data.

A Kaplan-Meier curve graphs the proportion of animals surviving over time. See the example at the top of the page. If an animal dies during the study, all the information about its survival is known and the survival curve reflects the animal's death with a step down. Remember the calf that lost its collar in year two? It was part of the curve during the first year of the study but was no longer part of the curve after it was lost. Scientists call that "censoring" the animal. Because the animal was last known alive, its disappearance is not reflected in the curve with a step down but rather with a tick mark. Because the fate of censored animals is not known, the part of the curve after the first animal has been censored becomes an estimate of survival rather than actual survival.

The data that DeBerti and his team have collected indicate that Pennsylvania's elk herd has high survival and high birth weights, which means the herd has plenty of food and resources and is generally very healthy.

## **WHERE DO WE GO FROM HERE?**

Next, DeBerti hopes to study elk between the ages of one and two. At two years a calf becomes an adult; birth to adulthood is a critical time frame in terms of survival. DeBerti had hoped to gather the information as part of the calf survival study but the collars dropped earlier than they had been designed to last. Getting the data now may involve corral trapping in a variety of areas across the elk range then collaring any nine-month-old calves with expandable collars. Currently there are about 120 elk "on air" being monitored by PGC staff, but some yearlings may be dropping collars as this goes to print.

- *Lori D Richardson, PGC Education Specialist*

## The Blair Hill Buck

IN THE PREDAWN darkness Claude and Foley were anxiously preparing their hunting gear for the first day of the 2005 firearms deer season. They had traveled some distance, Claude from upstate New York and Foley - with his father and friends - from Vermont. Their plan was to hunt on a large farm near Linesville, adjacent to SGL 214. The group met Engle, the farmer whose property they would be hunting on, well before daybreak as they piled into the bed of his pickup. At their designated spot Claude and Foley jumped out, and Engle said he would be back around 10 o'clock. Engle then proceeded to drop the other hunters off at their pre-selected spots.

Foley and Claude saw quite a few deer, all antlerless, and as neither had an antlerless license, all they could do was watch. At 10 o'clock, Claude and Foley were at the pick up point, and when Engle pulled in they jumped into the bed of the truck, firearms still loaded, and headed to another location. A few hundred yards down the lane a group of deer jumped out of a cornfield to their left, crossed in front of the truck and started running toward the woods, pausing momentarily to look back at the truck, maybe 35 yards away.

Foley spotted a 6-point in the group, and he immediately pounded his fist on the roof of the pickup for Engle to stop. Engle had barely stopped when Foley's rifle roared and the 6-point dropped. Engle jumped out of the truck and shouted, "What the heck do you think you're doing? That buck's not even legal; they have to have four points to a side here. Do you know how much trouble you can get me into, especially shooting from my truck?" Foley, with a furtive grin sheepishly replied, "I guess I just got excited."

Transferring to a new district is exciting, but learning its roads, townships, cities, people and wildlife can be pretty overwhelming, especially with the major hunting seasons about to begin. I transferred from the Marienville district in Forest County to the Pymatuning district in Crawford County on September 24, 2005. The prospect of learning my new district, which encompasses 340 square miles of farmland, woods and immense tracts of swamps, with the major hunting seasons quickly approaching, made me question my sanity.

Having been in two districts before, I knew a bit about what I was in for, but being in a major waterfowl area made me somewhat apprehensive. However, with much assistance and guidance from LMO Jerry Bish, Northwest Region Director Keith Harbaugh and Deputies John L. Ittel and Lawrence Hergenroeder (Larry is currently a cadet at the training school in Harrisburg), I managed to get through the first three months without too many snags - but with some really long days.

After the waterfowl seasons, archery season, small game and turkey seasons, I began to realize how many hunters flock to Crawford County. When the firearms deer season rolled around, I felt a little more comfortable, because Forest County is a popular spot for big game hunters, but boy, was I in for a surprise. I was beyond amazed at the number of deer hunters in Crawford County. It's no secret that the county harbors a good population of large bucks and antlerless deer, and as I quickly learned, the county attracts a lot of hunting pressure all season.

The first day of the 2005 regular firearms season, Deputy Hergenroeder and I were on patrol well before daylight. All the cars and trucks parked in and around the State Game Lands parking lots reminded me of the days when I was a youngster, hunting in the late '60s and early '70s. The morning soon became extremely busy, with calls about mistake kills, safety zone violations, loaded guns in vehicles, orange violations, shooting from the roadway and tagging violations.

It was about 2 p.m. when I asked Lawrence to drive for a bit. We'd just left the Pymatuning administration building and were driving through the controlled goose shooting area when I looked out the window and something caught my eye. I thought I noticed a speck of orange about 800 yards away, at the edge of the woods, in the middle of the controlled goose shooting area.

I asked Lawrence if the Food and Cover Corp had flagged any trees in the area. "Not to my

knowledge, Mario," he replied. I then asked him to pull over, and once he did I asked if he saw what I was talking about. At first he didn't, but then he said, "Oh, yea, now I do. It's a hunter with a rifle bearing down on a large herd of deer in the field."

Checking with my binoculars I saw a hunter, kneeling, with his rifle pointed at a herd of deer. I immediately radioed LMO Jerry Bish and asked what the quickest way into the area was. Before Jerry could respond, Keith Harbaugh, who was on patrol a few miles away, directed me to a gate on Blair Hill. After pulling into the Blair Hill parking lot on SGL 214, we went through the gate and continued on toward the hunter.

He remained motionless, rifle at the ready, not even noticing our approach. We were 50 yards away when he finally looked up and saw us. We pulled up and after getting out and taking a few steps towards the hunter, I noticed a large buck lying on the ground nearby. I introduced myself and asked him if he was the lucky hunter. He smiled and said he had killed the buck.

I asked him what his name was and he responded, "Claude Looter." I had him unload his rifle and asked to see his hunting license. Deputy Hergenroeder secured Claude's rifle, and as I checked his hunting license information, I asked if he knew where he was. He said that he and his friend saw some deer on the other road and pulled over and then followed them into this area. I then asked if he thought it a little unusual that no one else was hunting in the area. He then paused a moment to say something in his wireless microphone. I asked him where his hunting partner was and he motioned behind him in the woods. At this point he asked me if there was a problem. I explained that he was hunting in an area that is off limits to hunters, and that signs are posted conspicuously around the entire 1,600-acre area. I asked him what his partner's name was and he said, "Foley Thievery."

At this point Keith Harbaugh arrived, followed by Jerry Bish. I asked Claude if Foley had shot a buck and he started to fumble with his words. "Ya, he got a big buck." I instructed him to call Foley and have him come out of the woodlot and meet the officers on the lane. As Harbaugh, Bish and Hergenroeder went to meet Foley, I had Claude tag the deer and gave him my knife to field-dress it. I asked him if he saw the signs around the controlled area, posted every 40 yards, prohibiting any entry. He stated, "You know, we got real excited when we saw the big bucks, as we were riding around, and didn't pay much attention to any signs." I asked him where their vehicle was parked and he pointed in the direction of Ball Road (We later located their vehicle, with its windows down, keys in the ignition, parked right beside a sign that stated "ENTRY STRICTLY PROHIBITED"). Claude looked up at me while field-dressing the buck and asked, "Are we in trouble?"

"Yes you are, because you're hunting in a controlled area where merely entering is illegal, and then you illegally killed a deer." Looking up I saw Harbaugh returning and went over to meet him. When he got out of his vehicle he said, "Mario, if you think Claude shot a big deer, wait until you see Foley's." I was flabbergasted, because Claude had taken a really large 9-point. When Bish and Hergenroeder returned with Foley's buck, my jaw dropped. Foley had taken a huge deer with a massive 8-point rack. Foley, too, claimed he didn't see any posted signs.

At this point I contacted District Magistrate Rita Marwood on my cell phone and informed her that I had two nonresidents in custody that had just killed two bucks in the controlled area at the Pymatuning Wildlife Management Area. I informed her of the scale of the fines and she said to bring the guys to her office so they could post bond. When we arrived at the magistrate's office, a small crowd began to gather around the two large bucks on our deer racks.

Inside the courtroom the defendants each had two citations I'd issued them earlier when I explained the charges. One was for entering the controlled goose shooting area (\$200) and one for illegally killing a deer (\$800). With court costs, their fines totaled more than \$1,000 apiece. District Magistrate Marwood asked the pair if they could post bond.

They looked at each other, finally realizing that they were in a real jam, that if they couldn't post bond they would be headed to jail. They admitted they were unable to make bond, and the

magistrate filed commitment papers for the Crawford County jail. With Claude and Foley back in handcuffs, we transported them to the jail.

That evening I met Foley's father, and he wanted to know how to get his son and friend out of jail. I referred him to the district magistrate. He later told me that he was going to let the guys sit out their time in jail, as he didn't have the money to bail them out. I told him it was his decision. Foley's father then started complaining to me about the bond and how we should be out catching real bad guys instead of picking on his son and his friend. "That's exactly what I was doing," I responded, and he just glared at me.

The next morning I met with LMO Bish and he told me an informant had told him that Foley had shot a 6-point buck at 10 a.m. the day before, from the back of a pickup on Engle's farm. We notified the magistrate that we may have more citations before the pair was released from jail, and we proceeded to the jail early that morning to speak to Claude and Foley.

We spoke to Claude first, and after reading him his Miranda rights, we asked him if there was anything he wanted to tell us about his hunt on Monday morning. At first he acted as if he knew nothing, then LMO Bish asked him if he wanted to tell us about the 6-point Foley shot from the back of a truck. Claude looked up, turned beet red and blurted out, "I didn't shoot at all. It wasn't my idea; Foley shot the deer and the farmer put a farm tag on it to make it legal. Look, I'm in enough trouble and all I want to do is get out of jail."

We then asked the guards to bring Foley in and we read him his rights. LMO Bish asked Foley if he wanted to tell us about the 6-point. Foley looked stunned. He stared at us for a few moments, obviously wondering how we knew about the 6-point. He then confessed and was even apologetic for his behavior in this entire matter. I issued Foley two more citations - one for killing an illegal buck (\$300), and one for having a loaded firearm in a vehicle (\$100).

The pair finally made bond and pled guilty to all charges, much to the chagrin of Foley's father and friends who had to come up with more than \$2,500. They each also had their hunting privileges revoked. At the magistrate's office, Foley's father commented to me about how they had just paid a lot of money on this hunt for deer they never got to keep. I told him it's much easier and pleasant to abide by the law than break it and get caught. Foley and Claude were standing together when Claude said, "Boy, you guys don't fool around down here. You're serious when it comes to your wildlife and hunting." "You're right, Claude," I responded, "we like to think so."

## A Treetop Release

IT ALL BEGAN when the Millstone Township Road Crew, Dan Ellis and Eric Patton, were patching some end of winter holes on the River Road above Belltown. A pair of eagles became very vocal and then tried to chase the workers away. That was when they noticed a nest in a nearby white pine. They quickly finished what they were doing and then left the area.

Road Supervisor Ellis went about a quarter mile upriver where he could watch the nest and get some good photographs of the nest progress. An avid photographer, he captured some good photos of the adults and two growing eaglets.

In the meantime, township officials learned that the landowner, Seneca Resources, was preparing to move logging equipment onto the site to start a cut, so they called the Game Commission office for some assistance on protecting the nest. When I met with Seneca Representatives Craig Bowley and John Biel it was obvious that the company was going to be very cooperative with protecting the nest site, even if it meant not removing the timber from the nest area.

Everyone involved was excited about finding and having the opportunity to be monitoring the first Elk County eagle nest in modern times. All was going well with the eagles, and for those monitoring the nest who enjoyed watching the adults flying and feeding and the young birds growing. By mid-June the eaglets could be seen on the edge of the nest, testing their wings as they hopped up and down.

Everything changed, though, on Thursday, June 21, when a storm rolled through. While the wind didn't seem to be that bad, it must have hit the nest just right to shift its position in the tree. On Friday Supervisor Ellis noticed it was positioned differently in the tree, but the eaglets were still using it and an adult, as usual, was still standing guard. But that, too, all changed.

By Saturday morning the entire nest had fallen to the ground. One of the eaglets had somehow managed to end up on one of the limbs where the nest had been, but the other was seen on the ground, walking along River Road around 7:30. By early afternoon the Game Commission Northcentral Region Office had been notified about the grounded eaglet, and that there was a large crowd of onlookers wondering what they should do.

I was busy with an HTE class, so Deputy Ron Beeler went to the scene, where he found the eaglet with one adult trying to call it across the river while the other circled above the trees screaming a warning. With the help of a few volunteers he soon had the eaglet safely in a large cardboard box and was on his way to meet me in Ridgway. In the meantime, Region Law Enforcement Supervisor Quig Stump was on the phone, trying to find a licensed wildlife rehabilitator who could take the grounded eaglet. Thanks to his efforts, I got the eaglet from Deputy Beeler and was then on my way to Tamarack Wildlife Rehabilitation and Education Center in Crawford County.

After a few hours I arrived at Tamarack and met Suzanne DeArment. We got the eaglet into an area of her basement where she can place birds for short periods of observation. She found the eaglet to be in good condition, although not ready to fly or be on its own. Susan got a dead rodent she had stored for such occasions, cut it open and tossed it into the pen, and then we left the eaglet alone. After a short discussion we agreed that the best option would be to get the eaglet back to the nest tree as soon as it could be accomplished without risking the welfare of the other eaglet.

Over the next week Dan Ellis, Eric Patton and I monitored the old nest site and the progress the remaining eaglet was making toward being able to fly out of the nest tree. Our goal was to wait until the eaglet was able to take short flights and then get the captive eaglet back and into the nest tree so both eaglets would be there when the adults started the process of teaching them to hunt.

In the meantime Deputy Beeler's father-in-law, James Rickard Jr., a climber with Allegheny Power, volunteered to get the eaglet back up the old nest site.

On Thursday evening Sue reported that the eaglet was making short flights, which meant we had to

get our reintroduction plans in gear. I spent a good part of Friday getting the final plans and people lined up for the next day. The only snag was that Sue could not be there because of another commitment.

Early Saturday morning Crawford County WCO Mark Allegro picked up the eaglet from Sue, and about an hour later we met along Route 6, a few miles east of Corry. With the eaglet back in my possession I headed for Millstone Township.

Arriving a little after 10 o'clock, I headed to the spot where I could look down the river and up onto the hillside where the nest tree was. With binoculars I looked for the other eaglet, which I had seen there just the evening before. Search as I might, I couldn't find it now. Could it have taken flight earlier this morning? I wondered. If the nest tree eaglet could fly, that removed my fear we might end up with both eaglets on the ground during our reintroduction attempt. The last thing we wanted to do was jeopardize both eaglets' chances of survival. We all knew it was a calculated risk, but it was one we hoped to minimize.

I went back downriver a quarter mile, to where a small trail went up the side hill above the nest tree, and the reintroduction effort was soon underway. Quig Stump was there along with my two deputies, Ron Beeler and Andy Brigger, and our climber, Jim Rickard. There were also a few family members of those involved, but only the four officers and the climber went to the nest tree. All others went where they could watch from a distance.

The climb proved to be more difficult than expected. The nest tree was not large enough at the top for climbing. Instead, Jim selected a larger white pine nearby. The size of this tree, however, and its many limbs meant that Jim had to repeatedly tie in and then re-rig his climbing belt as he ascended over the many limbs.

After more than an hour of intense climbing, Jim made his way to a location above the deciduous tree line, where there was a suitable release limb with a clear flight path into or out of the tree. He decided this was the best location for release, so now it was time to get the eaglet up into the tree.

All week I had been wondering how we were going to do this. I needed something that would contain the eaglet yet allow it to be bumped against the tree and limbs without breaking any bones or damaging flight feathers. After much thought I took one of my large outside plastic garbage cans, drilled a hole in the bottom and attached an eye bolt through the bottom for the ground guide rope. Some air holes were drilled through the sides and the lid, while the side handles were used to attach the rope on both sides, to hold the can fairly level for the trip up into the tree.

Jim dropped the end of a rope from his perch about 80 feet up, and we rigged the garbage can containing the eaglet for his ride to his new perch limb. It didn't take long for Jim to pull the can up to his level, but the eaglet was not interested in coming out. Jim had to turn the can completely upside down - and even then the eaglet tried to fly back up inside the can. Finally the eaglet hopped onto the limb and sat there watching Jim for a moment. Then it moved farther out the limb and away from Jim's reach. At this point it was now up to Mother Nature; we had done all we could.

Jim lowered the garbage can and then started the slow climb back down. All the while, the eagle kept moving farther out the limb until it was finally satisfied with its perch.

When Jim was about halfway down, about 20 minutes after the release, the eaglet suddenly just took off in full flight without even faltering. We were all amazed and just stood there expecting the eaglet to come crashing back to the ground. Then, after the eaglet had flown around the old nest tree and into a small opening, we saw an adult in flight and the eaglet headed right toward it. The two eagles then turned and flew off, side by side, out of our view above the trees just seconds after the adult appeared.

We all looked at one another in a state of awe, and Quig and I were probably not the only ones with goose bumps. Had this just worked out perfectly? That's not usually the case when dealing with

wildlife.

Jim was soon safely on the ground, and after some high fives and congratulatory handshakes we cleaned up our gear and started our way out. While walking out, a mature bald eagle was seen several times circling overhead while another eagle, probably the newly released eaglet, was heard calling from the trees farther up the hill where the eagles were headed when last seen leaving together. As the adult and now unseen eaglet communicated back and forth those goose bumps returned, as did a feeling that just maybe the eagles were thanking us for returning their young, a majestic part of nature, back to its rightful place.

## Something's WILD at Middle Creek

IT'S A SOUND that gets stuck in one of those dark spaces at the back of your brain. You can still pull it out of your memory and hear it in your "mind's ear" months later, but it can't be imitated and it's nearly impossible to describe. It's an ear-piercing raspy sound, like it's coming from a very sore throat - a loud, descending, high-pitched scream that seems to linger too long on the hairs at the back of your neck, just hanging there in heavy air. It's the bawl of the barn owl.

There was a lot of bawling at Middle Creek Wildlife Management Area on June 29th when a clutch of five barn owlets were banded while a group of educators looked on. The banding took place during the latest advanced Project WILD workshop, WILD about Owls, led by PGC environmental education specialist, Bert Myers and state Project WILD coordinator and PGC conservation education specialist, Theresa Alberici.

Alberici says, "Project WILD is a wildlife focused conservation education program for K-12 educators and their students." Based on the premise that young people and educators have a vital interest in learning about our natural world, Project WILD is one of the most widely used conservation and environmental education programs. In Pennsylvania, the award-winning program is coordinated by the Game Commission and training for educators is available statewide through a network of volunteer workshop facilitators. Alberici adds, "Project WILD addresses the need for human beings to develop as responsible citizens of our planet."

The educators gathered at the Middle Creek Visitors Center to learn all about owls. They learned about owls globally and locally - from all over the world, from Pennsylvania and from right in the visitors center's back yard. They learned about owls so they can take the information back to their classrooms and students. The workshop will enable them to supplement their current curriculums and to teach required concepts and skills using owls and the information they've gained about them and their roles in the environment. Project WILD will help these educators meet state standards set by the Department of Education and will help students gain an appreciation and understanding of the natural world.

The educators participated in activities that they can instruct in their classrooms. They dissected barn owl pellets. An owl pellet is the parts of a prey animal that the owl couldn't digest. The remains - mostly hair and bones - are packed into a pellet and then regurgitated by the owl. Several small skulls and often the entire skeleton of prey animals can be found inside a pellet. Folks studying the eating habits of owls can use the skulls and skeletons to identify what species of animals are being eaten. Most remains are those of small rodents; meadow voles are a favorite prey animal of barn owls.

Teachers also learned about different types of feathers. Fluffy, down feathers insulate the bird and are found closest to its body. There are also contour feathers, which help give the bird its shape, and flight feathers. The wing feathers of the barn owl and the peregrine falcon are very different. While the peregrine needs stiff, strong-edged flight feathers to cut through the air at high speeds, the barn owl needs soft, light, wispy flight feathers to enable its silent, moth-like flight.

One of my favorite activities simulated a mark-recapture study. Some educators were unknowingly "banded" when they checked-in at the workshop. They were given special stickers for their name badges. Two assistant "biologists" at the workshop recorded information about the unsuspecting educators at two check-points throughout the morning and later gave a report about their activities. As it turns out, both "banded" and non-banded educators frequented the coffee and snack stations on breaks though "banded" educators were slightly more likely to chat with each other between sessions. The educators enjoyed fascinating presentations about the natural history of the barn owl and the Barn Owl Conservation Initiative in Pennsylvania, as well as an interesting lesson in genetics and how studying genes can provide insight into the dynamics of the commonwealth's barn owl populations.

But, the best part of the day - hands down - was getting to watch the banding of five young barn owl nestlings. Land Management Officer Jim Binder climbed a ladder outside the entrance to the barn owl nest box and blocked the hole with a piece of plywood. This would hold the young owls until Binder and biologists could retrieve them from a loft in the barn through a hatch on the lid of the box. George Gress is a volunteer bird bander with the Nature Conservancy and Dan Mummert is a Wildlife Diversity Biologist with the Game Commission, and with the help of Binder and PGC Wildlife Management Supervisor John Morgan, the two banded and gathered information on the five owlets. Each young owl received a metal band with a unique alpha-numeric label, and this enables biologists across the country (and, in the case of migratory birds, the world) to identify and report the sighting, capture or death of the individual. The biologists also aged each owl based on the emergence of the growing flight feathers from their sheaths and the amount of downy feathers present.

Karl Kleiner, a professor of biology at York College, also pulled a few feathers from each owl's belly for DNA analysis. He hopes to be able to create a database of barn owl DNA that will enable him to determine maternal lineage and genetic diversity of barn owl populations in Pennsylvania. Once he has a set of base data, DNA from an owl that isn't already in the database could be compared to the data set. Then, Kleiner might be able to determine if and how that owl is related to the current data set. He might be able to tell what nest it most likely came from and, thus, have an idea of how far it traveled to the site where it was captured and its DNA retrieved. He hopes to learn about the dispersal habits of the species in the commonwealth. Do they stay close to the site where they were born? Do males disperse farther than females? Do the Appalachian Mountains prohibit population expansion much beyond the southeastern part of the state? These are questions that Kleiner hopes to answer.

Although barn owls are the most widely distributed bird in the world, and are comprised of 36 subspecies, the commonwealth's barn owl population has been on the decline for several decades and it is currently listed as a state "candidate rare" species. The Game Commission is seeking information on both current and historic barn owl sightings and nestings statewide, and has targeted the species in its Comprehensive Wildlife Conservation Strategy.

One family of barn owls needs about 3,000 meadow voles to survive the year, that translates to at least 100 acres of grassland and pasture land within a mile of the nest. Biologists believe that, by working with landowners through the Barn Owl Conservation Initiative to enhance and conserve grassland habitat, the species has great recovery potential. Mummert emphasized the importance of grasslands adding, "Habitat isn't everything, it's the only thing." You can help. Report barn owl sightings by calling the Bureau of Wildlife Management at 717-787-1570 or by emailing [pgccomments@state.pa.us](mailto:pgccomments@state.pa.us).

## The Crossbow Buck

ON A SLOW SUMMER DAY in 2006 I was reviewing a special permit that had been issued. It allowed the permittee to use a crossbow during the regular archery deer season, and as soon as I examined it I became suspicious. The signature of the doctor didn't look right. It looked like it had been traced. I've looked at enough deer tags that have been written over to recognize that this signature was not an original. I picked up the binoculars I keep on my desk for looking at ducks on the creek in front of my house, and turning them around and looking through the objective lens I was able to magnify the signature on the application and confirm my suspicions.

As I read more of the application I noticed that the description of the physical ailment contained several misspelled words. I thought it odd that an orthopedic surgeon would misspell common trade words such as tendonitis and lateral. There were enough things that seemed wrong to warrant an investigation, and the first step was to obtain the original permit application from the Harrisburg headquarters. Although the permit application had been processed in 2002, personnel in the Technical Services Division found the application in no time.

While waiting to get the original application, I ran the permittee's name, Antwort, through our system to see if he had ever had any violations. When I saw there were none, I checked to see if he had reported killing any deer since the permit had been issued and found that he had reported killing an 8-point buck, with a crossbow, in Clinton County during the 2005 archery season.

After retrieving the application, Deputy Mike Good and I visited the doctor whose signature was on the application. We went to the receptionist's window and a very helpful lady named Kim greeted us. We explained that we were there because we had some doubts about the validity of the doctor's signature on a permit application. We showed her the application and she immediately said, "That's not the doctor's signature." After a few more questions, Kim left to speak with the doctor and returned to say that he would see us as soon as he finished with the patient he was currently with.

While we waited, Kim looked through Antwort's file, because if the doctor had signed the permit, a copy of the application would be filed, along with a record of the \$5 fee for having the doctor sign the form. Kim could not find a copy of the permit nor any record of a fee being charged.

The doctor came in and after introductions we explained why we were there. The doctor asked to see the permit and his first words were, "That's not my signature."

The doctor also stated that he was a hunter and familiar with the Game Commission's disabled hunter permits. He went on to say that he would not have signed off on a permanent crossbow application for tennis elbow. Not being a doctor, I had him confirm that "inflammation and/or torn tendon sheath" was, indeed, tennis elbow. Confident that we had enough information we decided our next step was to go see the permittee.

That night Mike and I went to Antwort's house. We knocked on the door and Antwort's wife answered. We told her that we needed to speak to her husband. She said he was in the shower and that he would be right there. We were invited inside but declined, as we had decided earlier to interview Antwort away from his family. We told Mrs. Antwort that we would wait outside in our truck.

We knew that the statute of limitations for obtaining a permit fraudulently was only two years, and that we were one year past the time for filing charges on that violation. However, because Antwort had reported killing a deer the previous hunting season, if we could prove that the permit was not valid, we could charge him with killing a deer unlawfully.

A few moments later he came out. We introduced ourselves and invited him to sit in the front passenger seat of my vehicle. I asked if he had killed a deer the previous year. Antwort said that he had. I asked him to tell me about it. He told us how he killed the deer with his crossbow, and when

asked, he said he sent in the report card. Antwort told us that it was a buck with eight points and that the deer was being mounted by a local taxidermist.

Now that Antwort admitted to killing the deer, we needed him to admit that he had forged his permit application. I asked him who had typed the application. Antwort said that he signed and dated (May 9, 2002) the application, and then took the otherwise blank form into the doctor's office and dropped it off, and then picked it up at a later date. Because it had been three years prior, Antwort couldn't be sure as to the exact dates he dropped off or picked up the application, but he was sure that he mailed the application to the Harrisburg headquarters the day after he got it back from the doctor.

I found this statement interesting because the application was stamped as being received in Harrisburg the day after the doctor allegedly signed it, which would have been the earliest day that Antwort would have picked up the completed form. Antwort said he picked the form up in the afternoon after work, so there was no way it could have been received in Harrisburg that same day. I didn't ask any further questions about this, as I thought this discrepancy would best be saved until later, after Antwort had been locked into his story.

I continued by showing Antwort the application and asked if he could explain how some of the common words like "tendonitis" and "lateral" were misspelled. After a few moments of silence, Antwort shook his head and admitted that he had no idea how this could be. He then reiterated that he took the blank form into the doctor's office and picked it up and that he had no idea, nor was it his problem, what happened once the form was dropped off.

I then asked how it was that the same font was used on the entire application. Antwort said he didn't understand what I meant. I showed him the application and pointed out that the entire application had been typed, except for his signature, the date he signed it, the doctor's signature, and the date the doctor signed it. Antwort nodded his head that he saw this, and I asked why his personal information was typed in by what appeared to be the same typewriter. Antwort's response was that the doctor must have typed in all of the blanks on the application.

My next question, then, was why the doctor didn't type in the date that he signed the application, considering that everything else except the signature had been typed. Once again Antwort indicated that he didn't know, and he reiterated that he dropped the blank form off and the doctor filled it all out.

I hoped that if I continued to punch holes in his story Antwort would finally give up and confess, so I kept poking. I saw that Antwort had a York address but that he lived in the country, in a township with a large rural mail delivery area, not the city of York. I pointed out to him that the township on the application was typed in, and asked how the doctor would know what township he lived in by looking at the zip code, as that particular zip code covered two townships. I knew the answer I was about to get and was not disappointed when Antwort told me once again that he didn't know, that he just dropped off the blank form and the doctor filled it out.

Antwort had been extremely nervous throughout this interview, but at this point he suddenly became a "rock." His face was fixed on the steering wheel of my truck, he didn't blink or say much, and he wouldn't move or look at me. Sensing that he was about to confess, I mentioned that I wasn't interested in the felony forgery violations; I just wanted to know about the permit violation. Once again Antwort mentioned that he really didn't know what to say to help us, because all he did was drop off a blank form, pick it up a couple of days later, and then mail it to Harrisburg.

"So that's your story and you're sticking to it?" I said.

"Yes," he replied.

With that, we told Antwort we were going to interview the doctor again, and if his story checked out then we would close the investigation. However, if his story did not pan out, then we would be back.

The next day Deputy Good and I went back to the doctor's office and spoke with the same staff. After we told them how Antwort answered all of our questions the same way, we told the staff that we needed information to counter this. The staff was quite helpful. They first provided all of the doctor's signature stamps that he had used since he had been in business, even the ones that were worn out and "retired." The staff willingly gave us lots of exemplars of all of the stamps. The doctor came in again and gave us exemplars of his signature as well. (Exemplar is a technical word for signature examples used by document forgery experts.) I felt confident that if Antwort did not confess that we had a solid enough case to warrant expending the time and money to have our documents examined by the State Police Crime Lab.

We asked the doctor if he would be willing to give us a written statement declaring that he did not sign the permit application. The doctor said he would be more than happy to do that. He excused himself and left to dictate his statement.

While the doctor was gone, Mike and I started asking about how these applications are filled out, who fills them out, who types them and if the signatures are signed or stamped and by whom. We were quite surprised -and delighted - when we were told, "We don't type these forms anymore." We were told that the office has only one typewriter and that it's a specialty typewriter used only for typing on X-ray film. All forms are either done with computers or filled out by hand, and that this is the way things had been done for many years. Just when we were thinking we had all we would need, the doctor came back in and told us that he had just dictated a statement and would mail it to us in a day or two.

Mike and I shook hands all around and thanked the doctor and his staff for being so helpful. Upon returning to the truck we were informed that we had a telephone call from a local attorney who was representing Antwort. Mike and I both laughed at this. In all the years I've been conducting investigations, this was the first time I had a suspect call an attorney before charges were filed.

Being that we had time and were so close, we decided to visit the attorney in person. Antwort's attorney was in when we arrived and able to meet with us. After some pleasant conversation, I asked how we could help.

He indicated that he had been contacted by Antwort, and that Antwort was worried. I replied that his client "should be worried." Without providing all of my information, I began to tell the attorney what was going on and what we had learned. He sat back in his chair and listened without interrupting. The most satisfying portion of this meeting came when I told the attorney that the doctor's office hadn't had a typewriter in their office since 2000. Upon hearing this, he leaned back in his chair, put his hands behind his head, feet up on the desk and a big smile came across his face.

Upon hearing the latest evidence, the attorney asked me what I wanted. I explained that I wasn't interested in the felony forgery charges. I said that I wanted Antwort to plead guilty to an illegal deer, which was a \$500 fine, surrender his unlawful crossbow permit and the mounted deer. I also said that I would charge him for possessing the deer unlawfully at his residence, rather than the location of the kill, which was in Clinton County. This would allow Antwort to take care of this problem in the easiest manner possible.

The attorney indicated that this was fair and that he would recommend this to his client and then get back to me. A couple of days later I was notified through our region dispatcher that the attorney had called. Upon returning his call, I was told that Antwort would accept the deal. I told the attorney I would file the charge and that Antwort could drop off the antlers with him and I would pick them up in a week or so. As I hung up, I was feeling quite pleased with the way the violation had turned out.

True to his word, I received the doctor's statement in two days. After opening it I was pleased to see phrases like "I understand completely that the problem has to be a permanent condition . . . especially a lateral tendonitis is not a permanent condition that I would have ever filled out a permit to use a crossbow for. Also, I have always personally signed these forms. I have never used a stamp. The signature that occurs on this form appears to be a reproduction of a stamp."

A few days later I filed the charge with District Justice Kessler in East York and headed back downtown to pick up the mount. I told the receptionist why I was there and was told that the attorney was not available but that I was expected. The receptionist left and came back a few moments later with a brown paper grocery sack. I opened it, glanced in and saw that the antlers were there. I gave the receptionist a seizure tag for the antlers and headed home.

When I got there I opened the sack, and when I pulled out the antlers I sensed something wasn't right. In my hands I was holding a small 8-point rack mounted to a wooden plaque. It finally hit me!

I immediately called Mike and asked him to describe the antlers that Antwort told us he had. Mike confirmed what I had refused to believe. That first night when we interviewed Antwort, he told us that he had shot a very large 8-point buck, and that he had taken the deer to a local taxidermist to be mounted. Neither of us could believe that Antwort would be so brazen as to give up a set of antlers that came from who knows where and keep the illegal ones.

The next day I called Antwort's attorney. He wasn't in, so I left a message that I needed to speak with him as soon as possible. When I didn't hear back from him by mid-afternoon I called back and left another, more blunt message. I briefly explained what Antwort had done, and that if I didn't have the right antlers in my possession before midnight, I was going to move forward with the felony charges.

I didn't hear from the attorney that day, but that didn't stop me from getting my deputies together and by either calling or visiting local taxidermists finding the one Antwort had used. I started with the ones closest to where Antwort lived. It didn't take long to find a taxidermist who knew him.

The next day, September 1, 2006, the opening day of the early goose and dove seasons, I stopped at Antwort's taxidermist. Both guys in the shop remembered Antwort and his deer. The one who had actually mounted the deer told me specifically what to look for when I saw it. He told me where he had repaired one of the brow tines and gave a very good overall description, including rough dimensions.

Meanwhile, the attorney called me back and I could tell that he was upset. He told me that he was out of the office the afternoon of the day before, and that he had just gotten my message when he came into work mid-morning. I told him that I was upset, but not with him. I then went on to say that I thought that Antwort tried to pull a fast one on us and explained how.

The attorney concurred and apologized profusely. I told him that because he didn't receive my message until that morning that I would extend the deadline until 5 o'clock that afternoon. After that, all deals were off. Once again, the attorney indicated that I was being more than fair in light of all that had happened. The attorney said that he had Antwort's work number and would call him right away and then get back to me. A few minutes later dispatch called to say that the attorney had just called. I returned his call and was informed that Antwort couldn't take off work, but that his wife could deliver the mount to the attorney before five, if that was okay. I told the attorney that would be acceptable. We then made arrangements for him to meet me the next day and deliver the mount.

On the second day of the early goose season, after successfully working an early morning baited goose hunt, Deputy Jeffrey Orwig and I met with the attorney. After he apologized again for his client's actions, he showed me the mount that Antwort had given him. After I checked the broken brow tine that the taxidermist had told me about, I was finally satisfied that this case was brought to a successful conclusion.

- *Guy Hansen, York County WCO*

## Williams Valley goes to NASP Nationals

FOR THE FIRST TIME, Pennsylvania youngsters participating in the National Archery in the Schools Program (NASP) competed at the national level. Students from Williams Valley middle and high schools took home the championship at the 2007 state competition, and by doing so, became the first Pennsylvania team to head to the nationals, in Louisville, Kentucky, this June.

The NASP national championship is the largest archery competition in North America. This year, more than 1,800 students from 133 schools and 21 states competed. While the 17 from Williams Valley, Tower City, placed 15th in the nation, and didn't bring home any trophies, many came home having shot all-time-high scores.

Chris Klinger, one of the team's four advisors, was impressed with the team's outstanding performance. "They took their shooting to a whole 'nother level. I couldn't ask for more. They'll admit that they do it for the love of the sport, not the trophies. They just love to shoot. I cannot emphasize enough how proud I am."

For some of the students, the archery club has given them a reason to come to school. Attendance and grades have improved, and the need for discipline has been reduced, because students don't want to lose the privilege of shooting. Kids coming up from the elementary school aren't asking questions about lockers or the cafeteria, they want to know how to join the archery club.

"Archery is a great sport for any kid, everyone can excel at it. Archery teaches people how to focus and it develops fine motor skills, hand to eye coordination and precision," says Klinger.

Currently, 72 students participate in the club, but they have only 12 bows. "We really need more bows and targets," said Klinger, "especially with the interest being expressed by kids at the elementary level.

"Without the support of sponsors, parents and the physical education teachers," Klinger emphasizes, "there would be no archery club at Williams Valley. They've made it possible."

Students who competed at the nationals included: 7th grade - Mason Zimmerman, Tyler Ressler, Zach Keim; 8th grade - Tyler Yanoscak; 9th grade - Amber Calhoun, Greg Cooper, Robert Custer, Sara Green, Steven Harrison, Yolanda Scheib; 10th grade - AJ Underkoffler, Erik Miller, Leah Bettinger, Trista Gilbert, Yvette Scheib; 11th grade - Matt Pribilla and 12th grade - Samantha Snyder.

The other three advisors, all physical education teachers at Williams Valley, are Sheila Brumbaugh, Brian Unger and Donna Willard.

While a complete list of sponsors is too long to list, special thanks go out to Doug Harrison and Codi Industries, Short Mountain Conservation Club, Orwin Gun Club, Porter Rotary Club, Safari Club International, Thompson's Service Center and the Williams Valley Archery Booster Organization.

- *Lori D. Richardson, PGC Education Specialist*

## An Alaskan Adventure

I HAD ALWAYS thought it would be great to travel to Alaska and see just how remote and wild the land is. What I never thought, though, was that it would be my son Ryan and his interest in hunting that would be the catalyst to give both of us the chance to do just that.

In February I attended the 2007 convention of the Foundation for North American Wild Sheep. I was there to set up a display and show attendees some of the educational materials that the Eastern Chapter of FNAWS has granted the Game Commission over the past several years.

### Great Organization

Both my 15-year old son Ryan and I are members of the Eastern Chapter of FNAWS, and I've found the group to be a great example of a conservation organization that puts its money where its mouth is.

In addition to supporting hunters' rights, FNAWS's mission is to promote the management of and to safeguard against the extinction of all species of North American wild sheep. The foundation also supports conservation, education and research for not just wild sheep, but for all wildlife.

Money is raised at FNAWS's annual banquet and distributed all across the United States, providing watering systems for wildlife in desert regions, money for research, and lots of money to educational organizations and state agencies, such as the Game Commission.

At this year's convention there was a youth contest. Members under 17 were given a 20-question wildlife quiz and shot at two targets with a BB gun. The top ten scores on the test, combined with the target scores, won prizes. The prizes were awesome and ranged from hunting and fishing trips to outdoor gear. Close to 70 youth members participated. My son and daughter took their quizzes on Saturday night, and to his surprise, my son placed in a 3-way tie for first place. After the shoot-off, he placed third and he chose as his prize the trip to Alaska.

The trip donors, Sue and Frank Entsminger, who run "Alaskan Hunting Adventures" located in Tok, were still at the convention, which gave us a chance to meet them and ask lots of questions.

April 15 came around quickly, and we were finally on our way to the Philadelphia airport. Unfortunately, due to flight delays, we got to Anchorage a day late, but were still excited. On our 5-hour drive to Tok, we knew we weren't in Pennsylvania anymore; more than 200 miles without seeing a roadkilled anything. Didn't see any live critters, either, but that was soon to change.

We finally arrived at the Entsmingers' and were greeted by Sue, Frank and their dog Midnight. While we were glad to finally get out of planes and trucks, we didn't sit around for long. Sue suggested we go check out her trapline by snow machine and see if she had caught any wolves. That didn't take much convincing for us, and we changed clothes and headed out. We didn't encounter any wolves, and Sue had to pull her snares because of melting snow and a caribou migration that would put the snares out of commission.

We drove for 24 miles, looking at mountains and trails where Sue traps for marten, wolves and wolverine. The country was remote, and a far cry from the country where I run my fox and raccoon trapline back home. We returned around 9 p.m., and it didn't get dark until 10.

Day Two we met Sue's son Matt Snyder, who is a registered guide, like Sue and Frank. Matt also owns a Piper Super Cub, which allows him to get hunters into areas where those without planes just couldn't go. He does lots of scouting and runs his trapline from this plane as well. Matt caught his last wolf of the year the day before we arrived. (If our plane had been on time in Philadelphia we would have seen that wolf in the snare.) Matt took us to a remote lake 46 miles away that few people have ever fished, where we would not only fish for huge pike, but also try spearing them with a homemade spear, through a hole that Matt had cut out of the ice a few days before.

This turned out to be an incredible day. Ryan, Matt and Matt's girlfriend Mel, flew in the first trip to the lake. An hour and a half later Matt came back and picked up me and some more gear. Matt told me that Ryan had already speared a 31-inch pike, and that I had better get there soon, while there was still some fish left.

Our flight was magnificent. We flew over snow-capped mountains and through deep ravines and drainages just loaded with caribou and moose tracks. We saw five moose just before we landed and we followed some fresh wolf tracks but never saw the wolf that made them. The fishing was great, and together, Ryan and I landed and released 24 pike between 25 and 31 inches. Ryan also speared two large pike, while I got one. Those three fish were some of the best tasting that I have ever had.

Day Three found us out on snow machines again. This time Sue took us for 28 miles on a few of her different trapline routes. We saw lots of caribou and tracks of marten and wolverine. We traversed over frozen streams in the morning and partly open water on the way home. We took those machines across large patches of ice, up and down very steep grades and through some of the prettiest scenery I have ever seen. This was the most remote trapline I have ever been on. You really need to know how to work smart and be safe when you are out in the Alaskan bush, because of all the unforeseen dangers and situations that can be encountered. I really have respect for trappers like Sue and Matt who harvest fur in such a remote and vast landscape.

Day Four we visited a local Native-American school. The entire enrollment from grades K-12 was 13 students. Talking with the students and their two teachers, Ryan and I found that even though the locations are vastly different, kids are still kids no matter where they are found. This was a great cultural experience for both of us.

Later that morning, Matt drove us to an old gold mining town and then we went hunting for ptarmigan and snowshoe hares. Ryan harvested a nice female rock ptarmigan and we each bagged a snowshoe.

On Day Five Ryan was upset about leaving. We had both made new friends and neither of us wanted to head home. With a 5-hour drive ahead of us, we had to leave early, and this time we saw moose and snowshoe hares on the way, and the landscape was just breathtaking.

I would like to thank both Sue and Frank Entsminger as well as Matt Snyder for an awesome Alaskan adventure. I would also like to thank the Foundation for North American Wild Sheep for giving us this incredible opportunity, as well as for sponsoring the youth contest and for caring as much as they do for the future generations of conservationists.

- *Dan Lynch, Southeast Region Wildlife Education Supervisor*

## The VW Buck

SATURDAY, October 21, 2006, Deputy Bob Schmitt and I were on routine night patrol in Dauphin County when a call from the Southeast Region Office alerted us to a poaching incident that had just occurred in Lebanon County, our neighboring district. We advised the region office that we could respond and then headed that way.

While en route, we contacted the witnesses and they gave us directions. When we arrived at the scene, the witnesses were waiting for us and directed us up into a farm field where we found a large, freshly killed 8-point buck. The deer had a drag rope around it and had been dragged to where a vehicle had been parked. The witnesses described the incident.

At around 9:30, the neighbor heard a single rifle shot right in front of his farm. He immediately looked out and saw a small white vehicle speeding away from the scene. He noted that the vehicle did not have any taillights. About 20 minutes later he saw a small vehicle with no taillights spotlighting the same area. The vehicle left, only to return a few minutes later, at which time it was driven up into the field and behind a small grove of trees, and then all of its lights went out.

At this time, the neighbor called the farmer who owned the field and told him what he had seen. The farmer immediately drove down, and as he drove into the field and around the grove of trees, he saw a small white vehicle. As he approached, the vehicle took off at a high speed, just missing his pickup. By this time the neighbor was coming down the road and saw the vehicle fleeing. Both the farmer and the neighbor pursued the small car, but could not catch it. They both agreed that the vehicle had no taillights and that it looked like a Volkswagen Passat.

As we searched the scene for evidence, we found two large pieces of plastic that had broken off the fleeing vehicle. In his haste to get away, the driver hit a drainage swail and broke some parts off the car. There was also a fluid trail that looked like antifreeze extending about a half-mile down the road. We photographed the deer, the vehicle parts, and a tire track that had been left by the vehicle. After gathering all the information (and the broken vehicle parts), we drove around the area, looking for the white vehicle. We checked with local gas stations and stores to see if anyone had stopped in recently for antifreeze, and we contacted the local State Police unit and the county probation officer to see if this vehicle might belong to anyone they had dealt with.

The next day, we went back to the scene to continue the investigation. We found the blood trail and the impact point, so we knew where the deer was standing when it was hit. Based on the direction of travel of the hair and tissue, we also knew roughly from where the shot had been fired. The distance of the shot was approximately 65 yards, uphill, at an elevation of 10 degrees. At this angle, the bullet fragments that went through the deer continued over the hill toward houses and a major interstate. During our investigation at the scene, several local residents stopped by to voice their anger about the poaching.

The following day I took the broken vehicle parts to a local Volkswagen dealer and asked if they could tell me what type of vehicle they had come from. They identified the parts as fender liners off a 1998 to 2004 VW Jetta. They also said that Passats and Jettas look very similar. Now at least we knew what model of vehicle to search for.

Our investigation continued, and over the next several weeks we received many tips and bits of information from concerned sportsmen and local residents. We checked out several similar vehicles, but didn't find the one we were searching for. We interviewed several individuals, but none appeared to be connected to this poaching.

At one point, we got word that Juston Kroll had been bragging about shooting several deer in the area, including the one we were investigating. He also bragged that we would never catch him, because he had gotten rid of the vehicle shortly after the incident.

Following several more tips, we located a white 1999 VW Jetta at a car dealership near Lancaster, nearly 30 miles from the scene. Looking at the pictures on the dealer's website, it appeared that the left front wheel well was missing the fender liner. I called the sales manager, identified myself, and asked if he could have someone look at this vehicle and check the front fenders. He called me back somewhat surprised and said that in fact, both front fender liners were missing. He confirmed that the car had been traded in by Juston Kroll on October 27 (six days after the poaching). I told him we would be coming down to inspect the vehicle.

WCO Veylupek, Deputy Schmitt and I met at the car dealership. The employees were gracious enough to put the car on a lift and remove the front wheels so we could get a better look at the damaged area. I brought in the broken pieces we had retrieved and the jagged edges fit together just like a jigsaw puzzle. We took photographs of the fender liners, the damaged bumper, the undercarriage of the vehicle and the tires (which matched the picture of the tread imprint left at the scene). We also removed dirt and debris as evidence, to match the soil at the scene, if necessary. Then we photographed and removed several samples of what appeared to be dried blood from the inside of the trunk. The employees got a kick out of all the activity, saying that it was like watching CSI on TV.

At this point we were certain Juston Kroll was involved. And when we found where he worked, we learned that he would be on vacation for another week, so we decided to contact him at home.

On our first trip to Juston's residence, no one was home. On the second trip, no one was there, but we left a card asking him to call the region office in Reading. Later that day, the office personnel advised us that Juston had called. Deputy Schmitt contacted him and asked him to meet us at the Jonestown State Police barracks to discuss some issues.

Jonestown PSP let us use one of their interview rooms. Juston initially denied shooting the deer and or knowing anything about the poaching. I asked him to come outside to see something. Outside, I opened the back of my Explorer and showed him the broken fender liners. I told him that they were a perfect match to the damage on the fenders of his wife's Jetta, which he had traded in at a dealership near Lancaster. He didn't say a word, but the look on his face was priceless. I told him that this wasn't a random interview, and that we had done a thorough investigation that had led us to him.

We then went back inside. As he sat down in the interview room he said "I shot the deer." Apparently Juston had had some sense of where the interview would lead, because he'd brought his rifle with him, figuring we would take it. We took the rifle - a Marlin 336, .30-30 - and gave him a receipt.

The interview continued, and Juston described the events of that night. He said he was alone when he shot the deer. He had spotted the large buck, stopped his car, removed the rifle from the trunk, loaded it and shot the deer. Immediately after he shot, he drove to Fred Krane's house and asked Fred to help him with the deer. Fred and his girlfriend came back with him to the scene. After spotlighting the area to locate the deer, they drove up near the deer and shut off the car. They then dragged the deer to the car and were attempting to load it when the farmer drove up into the field. They took off, without the deer.

Now we knew the identity of the other two people involved - Fred Krane and his girlfriend. Two days after the Kohr interview, Deputy Schmitt and I went to Fred's house. He was expecting us, because Juston had already called him. We interviewed Fred there, and his story closely matched the story Juston Kroll had told us. Fred did add that initially they'd tried to load the deer with the car pointing uphill but could not do it. He said Juston then turned the car around, and as they were attempting to load it a second time, the farmer arrived. Perhaps the highlight of the interview was when he described their getaway. In their haste to exit, as the farmer was approaching, Fred jumped into the trunk of the Jetta and Juston got behind the wheel. When the Jetta hit the drainage swail, Fred thought he was going to die. He said his whole body hurt for a week afterwards from being bounced around inside the trunk during the chase.

On Saturday, December 9, we called Juston Kroll again. We informed him that there was a problem with the investigation - that the ballistics on the rifle he gave us did not match those that had killed the deer. Juston admitted that the .30-30 he gave us was not the rifle he'd used. He assumed we would be keeping the rifle, so he gave us an old one. We met Juston at his house and he gave us a Savage .270, swearing that it was the gun he'd used to kill the deer. We told him that barring any further problems, this would conclude the investigation and he would be receiving citations in the near future.

This was a lengthy investigation that had several twists, turns and dead ends. Without the help and information from many concerned sportsmen and residents, we would not have been able to pull all of the necessary information together. Sincere thanks go out to all of them.

- *Deputy Larry McCarter, Dauphin County Deputy WCO*

## PA Elk receiving Signals from Space

AS I CLIMBED into the SUV, I went over a checklist in my head: Map to my colleague, road trip partner, mentor and chauffeur's home - Check.

Clothes: everything from T-shirts and sunglasses to insulated thermals and a head lamp - Check.

Snacks, because I've learned that biologists typically cache enough food in their vehicles to enable them to spend all day in the field, sometimes even half the night (hence the head lamp) -Check.

Camera, note pad, water bottle and more snacks - Check.

Jon DeBerti, the PGC elk biologist, had called to say that the GPS collars had arrived early and that his team would start earlier than originally anticipated. Since my colleague and I had been scheduled to meet them a few days into the project, the new development put us in a time crunch. They had 10 GPS collars to fit on 10 cow elk, and we had hoped to be there for some of the action.

By the time my colleague, PGC videographer/photographer Hal Korber, and I met up with DeBerti's team near Karthaus, nine collars had already been placed on cows and were sending signals from the woods. We had two days to get the story on that tenth collar.

We climbed into one of the trucks and off we went. The whole adventure had a kind of "wild goose chase" feeling, though I've never actually chased a wild goose.

Part of the team went one way, we went another. We were racing against time to get the last of the GPS collars on before it was too late. Too late being about two days away, when cows would be entering their third trimester of pregnancy. At that point, biologists won't administer the drugs necessary to tranquilize an animal, as a precaution to protect the developing fetuses.

These "elk guys" are die-hards. They'd hardly slept that week, they'd collared 9 out of 10 cows, and they'd continued to gather locations on nearly 80 other elk that are radio collared.

Pennsylvania's elk range is greater than 2,000 square miles, though elk inhabit only 800 or so. With up to 650 elk to keep track of, the team members had their hands full even without the added pressure of having to capture and collar 10 cows before that third trimester.

We weaved through the mountains and over streams, passing small towns in a blink, marveling at the ice packed along the edges of the river, and enjoying the scenery as we searched for hours and miles upon miles. We drove, stopping now and then to poke an antenna out the window and listen for bleeps on the radio receiver.

There are 12 subpopulations of elk on the elk range, and biologists have VHF radio collars on elk in each one. They hoped to get a GPS collar on one adult cow in 10 of the subpopulations. With nine GPS collars donned, the biologists wanted to get the last one into one of two of the three remaining groups. During the search, they hoped to get a bead on those two subpopulations and also track down a large bull for video footage.

On Monday night we set up on a farm near St. Marys where elk had been visiting at night. We sat in the truck with the windows down so that, in the event that elk approached, someone could shoot a tranquilizer dart at one. It got dark and cold and the straps of my head lamp were beginning to get uncomfortable, when movement at the edge of the field inspired hope. But it was only whitetails, and they headed off into the woods shortly thereafter. We waited for an hour or so. Backup help arrived and departed. We waited some more, and DeBerti finally called it a night at around 10:30.

Tuesday morning, not too bright but early, we were at our checkpoint. Part of the team was already checking a signal on a large bull not far away, but the bull turned out to be inaccessible, so we hit the road again. We drove for miles, winding through the beautiful landscape and listening to radio

chirps, mostly between biologists and technicians in separate vehicles, but also some from the receiver picking up a VHF signal when we stopped to tune in one of the two elusive subpopulations.

Tuesday afternoon: more miles, more radio conversations, faint receiver bleeps, and then, a new plan led to a welcomed break. We set up at around 4 p.m. next to a cornfield that one of the subpopulations had been frequenting. Radio chirps told us the herd was bedded just off the edge of the field. DeBerti and his technicians set up two "sting operations," one near bait at the far end of the field and another -DeBerti, Hal and me - as a backup, along the dead-end road that bordered one edge of the field.

At around 5 p.m. a few elk venture out into the field. We radioed the shooters to let them know that the animals seemed to be heading to the bait, but nobody answered. Minutes later, still nobody responded. The elk were headed right toward the bait, but where were the shooters? Did they know?

Then the elk changed course, moving diagonally across the field. If they stayed on that bearing they'd cross the road without offering either team a shot. The elk continued on, and DeBerti made a quick decision to intercept. Hal drove steadily along the edge of the field toward the herd. I was a little surprised that our moving vehicle didn't seem to spook them. I thought SHOOT, what are you waiting for. Hal kept driving, awaiting a signal from DeBerti. SHOOT, I kept thinking. I couldn't believe that the elk hadn't bolted but, instead, were just standing there looking at us. Hal drove until we were as close as we could possibly get and still be on the road. DeBerti signaled to stop, then took his shot.

The cow barely flinched but began to pull at the red tag on the end of the dart. It was 5:25, and by 5:31 she was out. The rest of the herd stayed nearby, watching, until the technicians (who had returned to their vehicle and received our radio transmission about the successful shot) and DeBerti jumped out of their vehicles with their tools and rushed to the downed cow.

First they blindfolded her, to keep her calm, then they positioned her so her head was at least level with her body. Next, they checked her heart rate and respiration for signs of distress and took her temperature. Her heart rate should be about 20 beats/minute (normal walking activity is 65) and her respiration should be about 10 breaths/minute (15-30 is normal). Normal temperature is 100.3 degrees.

She received a tag in each ear and the collar was slipped around her neck and bolted securely. They examined the wear on her teeth to age her - she was 3½. Then they gave her a drug to reverse the effects of the tranquilizer, and we backed off to watch and make sure she was okay.

She came out of the drug quickly. She took a few deep breaths, her ears twitched, and a minute later she was staring back at us from the middle of the field, collar on her neck and iodine stain on her side as souvenirs for her trouble. WOW! It was really cool and it happened so fast. I even had snacks left.

The effort to collar these cows with GPS units is part of the current habitat-use study being conducted by the Game Commission, Indiana University of Pennsylvania (IUP) and the Rocky Mountain Elk Foundation (RMEF). Jason Kougher is one of three IUP graduate students working on the project under the direction of Dr. Jeff Larkin. John is handling the telemetry, Lindsey Heffernan is analyzing fecal samples to see what the elk are eating in relation to what's available in the landscape, and Melia DeVivo is studying habitat selection by newborn calves and their mothers. RMEF is helping to fund the effort, and local landowners have been most cooperative in allowing the team access to their properties.

What is GPS? It stands for Global Positioning System. Each 2-pound collar sports a GPS unit that receives satellite signals every three hours. Each time a unit receives information from the satellites, it interprets its exact location or, in effect, the exact location of the elk wearing it. Each location is stored within the unit, which operates for about 18 months, gathering roughly 4,300 locations during that time.

Each unit also sends out a VHF radio signal 12 hours a day, 5 days a week. Technicians use the VHF frequencies to locate the cows, two or three times per week, to get crepuscular, feeding, and mid-day, or bedding, locations.

Since 2003, nearly 80 elk, including 70 adults, 20 of which are bulls, have been collared with VHF radio collars. Since then, technicians have used radio receivers, antennas, compass bearings, hand-held GPS units and vehicles to determine, and later enter into a database, more than 6,000 elk locations. The 10 GPS collars that now attire elk cows will expand that database with another 43,800 locations, and it won't require hours of field time triangulating with radio antennas, receivers and compasses, nor time to enter the data. In fact, the technicians are a little worried that GPS technology could eliminate nearly all of their outside work.

When the battery life of a collar nears its end, a charge will detonate to blow apart the fastening device. Collars could begin dropping in May 2008, most likely it will happen in July, and under the best circumstances they'll hold on until September.

Each collar has sensors that detect activity, if a collar stays still for more than eight hours, its VHF signal changes to "mort-mode" which could mean the animal has died, but biologists are hoping to hear a mortality signal only when a collar has dropped and is, therefore, no longer mobile. Technicians checking the VHF frequencies for weekly locations will recognize the change in signal, then retrieve the unit using an antenna and receiver to find it.

The elk team is anxiously awaiting the time when the first collar "blows off" and the ensuing treasure hunt to find the fortune it will hold inside. Once a collar is found, it will be connected to a computer and the collection of locations will be downloaded into a database. Then the locations can be mapped and layered with maps of habitat types, rivers and roads, to show what resources elk in each of the 10 monitored subpopulations are selecting, what seasonal habitats they prefer and what travel routes they use.

Biologists hope to learn how subpopulations travel between favorite sites, if those movements vary with the seasons and how subpopulations are associated. They want to learn about dispersal, to help understand the genetic exchange between subpopulations and to predict areas the elk population might expand into. They hope to learn about winter habitat use and why some elk stay on the high plateaus while others don't.

Habitat selection by calves will also be an important component of the GPS work. If a calf can survive its first three weeks, it has a great chance of living until, at least, hunting season. Biologists believe calves are selective of edge habitat, low forest and modified openings, and hope to confirm this theory with the GPS findings.

Biologists are also hoping to learn from the fecal samples being taken from varying landscapes throughout the elk range from male, female and juvenile elk. They hypothesize that diet selection will vary depending on age, gender and season. Cow and calf groups have much different nutritional needs than a group of two mature bulls, and biologists hope to see if that is reflected in their use of the landscape.

Since 2001, the PGC has planted numerous food plots and created many wildlife openings. Lots of time and money have been invested. The information from the GPS collars will enable biologists to evaluate the habitat currently being managed for elk, as well as determine what additional habitat can be made suitable for elk with very little management.

The data will help biologists determine where openings are necessary and what habitat components are important to have near those openings. They'll discover where habitat components are missing that can be managed for. For instance, if early-successional forests are needed, timber can be cut. By learning what elk are eating versus what's available, biologists will be able to make more efficient management decisions. For instance, clover is a high maintenance crop, perhaps a lower maintenance grassland can be substituted to fulfill the same need. The GPS data will help the agency

spend future monies more efficiently and more effectively.

The GPS collars are helping to define how elk use the landscape of northcentral Pennsylvania. They can be there when biologists can't; and they are enabling biologists to be more efficient managers with better, more effective management plans. That's good for Pennsylvania because habitat management that benefits Pennsylvania elk also benefits many other wildlife species in Penn's Woods, and that benefits millions of Pennsylvanians.

- *Lori D. Richardson, PGC Education Specialist*

## Flying WILD at Middle Creek

IT WAS ONE of the coldest days of the year at Middle Creek Wildlife Management Area, with a forceful windchill that dropped the temperature into the single digits, stinging my exposed fingers and making my eyes water. But that didn't deter the students from Manheim Township's Schaeffer Elementary who braved the wind and bitter cold to see the more than 100,000 migrating snow geese and tundra swans that had dropped in.

As one group of students stepped off the bus at the Willow Point Trail parking lot, a huge flock of snow geese lifted off a nearby field and formed a raucous, living, swirling cloud above us. When the boisterous "snows" finally cleared, two bald eagles silently soared high above. Bert Myers said that the eagles had probably spooked the flock and that he's even seen them take snow geese right out of the air after frightening a flock up off the ground.

Myers is an Environmental Education Specialist at the Game Commission's Middle Creek Visitor Center in Lancaster County. Middle Creek was created in 1973 in response to hunters' requests for a place where the Game Commission would manage for waterfowl, particularly Canada geese. Now, the 6,254-acre facility harbors a wide variety of birds and mammals, in addition to the hundreds of thousands of ducks, geese and swans that stage there during spring and fall migrations.

The students of Schaeffer Elementary were visiting Middle Creek as part of the Flying WILD program that their school has embraced. According to the Council for Environmental Education, Flying WILD provides "interdisciplinary, standards-based opportunities to engage students in real-world learning." The program is correlated to the National Science Education Standards and, using classroom activities and bird festivals, helps students develop an understanding of migratory birds and the importance of their conservation.

Flying WILD was first brought to Pennsylvania in 2006 when Theresa Alberici, Game Commission Environmental Education Specialist, called a group of conservation education leaders together at Wildwood Lake Sanctuary in Harrisburg to learn about the program and discuss how best to implement it here.

Bert Myers suggested Middle Creek as the perfect place to inspire educators and students using the Flying WILD curriculum because of the location's significance to migrating waterfowl. He also had been working with Schaeffer Elementary for several years and knew that its staff and students would be as excited about Flying WILD as he was.

Schaeffer Elementary is unique in that it has an Environmental Science Signature. The signature is integrated across all disciplines. Reading and writing exercises, math problems, art projects, social studies and science lessons, they all relate to the environment. The school also has gardens, a bluebird box trail and a pond where students frequently go outside to learn about and tend to the environment. The school's entire innovative curriculum addresses the Pennsylvania Environment & Ecology Standards and was developed with help from the Game Commission.

Schaeffer's environmental science theme builds on knowledge from previous grades and promotes responsible environmental stewardship. The school's website also states that in a nationwide study titled, Closing the Achievement Gap, students in schools using the environment as an integrating context for learning: performed better in reading, writing, math, science and social studies; had reduced discipline and classroom management problems; experienced increased engagement and enthusiasm for learning; and saw greater pride and ownership in their accomplishments.

Teachers completing a Flying WILD training session receive an educator's guide with background information on birds and birding, and planning and implementation tools to host a bird festival and activities for teachers, volunteers and students to lead.

Why would educators spend time teaching their students about birds? Birds are everywhere. You

heard them this morning, you saw them on your way to work or school, you'll see them while you're running errands and on the way home, you see them in everything from art and literature to history and the economy. The early bird gets the worm. Bye Bye Birdie. Yankee Doodle put a feather in his cap. The infamous Chicken Dance. Down pillows, comforters and jackets. Omelets. The Baltimore Orioles and the Pittsburgh Penguins. The canary in the coal mine. Birds play important roles in our life everyday and an essential role in healthy ecosystems.

Did you know that bird watchers spent \$32 billion on the activity in 2001? Or that while snow geese and tundra swans stop at Middle Creek and other staging areas to rest and feed during their migrations to Canada and the High Arctic, other birds fly non-stop for up to 100 hours to reach their nesting territories, requiring huge fat reserves before making the trip? A hummingbird, which normally weighs 3 to 6 grams (a nickel weighs 5 grams) doubles its weight to make its non-stop flight across the Gulf of Mexico during its migration, and the arctic tern migrates over 22,000 miles - equivalent to driving from Los Angeles to New York City nine times. Are you aware that more than 10 percent of America's 852 bird species are threatened or endangered?

Last summer, two Schaeffer teachers attended the American Wilderness Leadership School in Maine where they learned about Flying WILD from Myers, who instructs at the school. When they came back and told other Schaeffer teachers about it, their excitement spread, and two teachers submitted a grant to the Department of Education to help make a trip to Middle Creek part of the school's curriculum. The grant paid for buses, pencils, student-made field guides and handwarmers, and even substitute teachers to cover positions at school while the full-timers went on the field trip. In the fall, 19 of Schaeffer's teachers completed a 6-hour Flying WILD training session taught by Game Commission staff at their school. Then they began preparing nearly 400 students (the entire school) for the trip to Middle Creek.

The students began fine-tuning their bird identification skills and four 5th graders created really neat photo field guides for their classmates to use during the trip. The guides were prepared for three different grade levels: K-1, 2-3 and 4-5. The youngest students had pictures of birds and tally boxes; the second and third graders had room to journal next to their bird photos; and the older students had places to record the date, location and habitat of the birds they spotted. Myers visited the school a week prior, to tell the kids all about Middle Creek, its history and the wild birds and mammals they might see there.

While at Middle Creek, Schaeffer students reviewed identifying characteristics and learned about the migration routes of some of the waterfowl they'd come to see. The greater snow goose, which is just a bit smaller than a Canada goose, is all white with black primary feathers on its wingtips. They have pink feet and a pink bill that almost looks like a smile, and their honk is high-pitched. A small percentage of snow geese are blue-phase, their bodies look bluish and they have a white head. The snow geese that stop to feed and rest at Middle Creek migrate up from the coasts of the Carolinas on their way to the High Arctic.

Tundra swans are all white with black beaks and feet. Juveniles are a dirty-gray. Tundra swans are considerably larger than the snow geese and have long necks. If you have really good binoculars or a spotting scope you might be able to see the small yellow eye patch directly in front of each eye. Tundra swans wintering as far south as coastal North Carolina may stage at Middle Creek or nearby along the Sus-quehanna River on their way north to Canada's Northwest Territories to nest.

Some of the Canada geese at Middle Creek don't all migrate. There is a large population of resident Canada geese that stays year-round at the facility rather than follow their kin north to Quebec and beyond.

I had to smile when I asked one group of girls what birds they'd seen that day. They beamed and hopped enthusiastically holding up their field guides and shouting, "Snow geese, tundra swans and Canada geese!" Those were birds they'd been focusing on throughout the day, but they caught me off guard when they added, "bald eagles, a red-winged blackbird, a black-capped chickadee and green-winged teal." These kids knew their stuff.

Schaeffer students also knew the four components of habitat: food, water, shelter and space. They knew that a male duck is a drake and a female duck is a hen. They knew that the drake is brightly colored to attract a mate and that the hen is camouflaged to protect the nest. They even named animals that might prey on ducks: foxes, raccoons, snakes and snapping turtles.

They learned how biologists are studying waterfowl by using neck collars and radio and satellite telemetry to find out where these birds go, how long it takes to get there, how long they stay and what types of habitat they use.

Teachers, parents and students were full of positive comments and smiles. They were excited about exploring Middle Creek, even with the frigid temperatures and tremendous winds. "It's all part of the adventure," said one parent, glad to be off work and out discovering nature with his son. Myers said that the Department of Education has been nothing but supportive of Flying WILD and other programs going on at Middle Creek.

For more information on some of the birds that visit Middle Creek go to [www.pgc.state.pa.us](http://www.pgc.state.pa.us), click on [Wildlife](#) on the left then [Wildlife Notes](#) on the right and scroll down to view the [Snow Goose](#) and [Tundra Swan](#) notes as well as notes on many other Pennsylvania species.

Visit [www.flyingwild.org](http://www.flyingwild.org) or call 717-783-4872 for more information on the Flying WILD program.

And when you're ready to break out your binoculars and join the ranks of the more than 46 million birders in America, be sure to plan a visit to Middle Creek.

- *Lori D. Richardson, PGC Education Specialist*

## Private Landowner Assistance Program

WHILE WALKING along a well-worn path through a mixed hardwood forest of maple, oak, hickory and pine, I could see ahead of me brilliant white sunlight reflecting off a field dominated by orchard grass, goldenrod and locust. I was approaching an overgrown field that decades ago pastured cattle and was now slowly reverting to the woodland habitat that was likely there before it was settled hundreds of years ago.

Before reaching the forest edge, I heard the characteristic bzee-bzz-bzz-bzz of a rare golden-winged warbler coming from somewhere in the field. After making a dash for the forest edge, I got a good look with my binoculars at the male warbler, with his stunning combination of golden-yellow wing patches and jet-black facemask, perched near the top of one of the young locusts in the overgrown field.

My guide for the day was Don Orris, the owner of the property and an avid birder, who informed me that goldenwings had been breeding in this brushy field for several years. Orris also told me about many other wildlife species, including wood thrush, scarlet tanager and flying squirrels, that he commonly finds on his property and hopes to continue to find in his fields and forest for years to come.

Through a new Game Commission program called the Private Landowner Assistance Program (PLAP), my role was to provide guidance about how he could better manage his property for wildlife diversity, with an emphasis on the nearly 100 bird and mammal species of concern that breed in Pennsylvania.

PLAP was initiated to help carry out the PGC's mission of protecting and conserving the nearly 500 bird and mammal species that reside in or at least pass through Pennsylvania. Historically, much of the PGC's land management efforts have focused on State Game Lands, which now number around 1.4 million acres, five percent of the state. Managing Game Lands for wildlife has a positive, but limited, effect on the state's wildlife. The actions of private landowners, however, who own more than 85 percent of the commonwealth's 7.4 million acres, that have a tremendous influence on the long-term sustainability of many of our wildlife species. With federal funding, the PGC created PLAP and hired five regional wildlife diversity biologists to help interested landowners better manage their properties for wildlife.

Since 2004, these biologists have helped more than 330 landowners, providing personalized wildlife management guidance for more than 69,000 acres of fields, forest and wetlands. These biologists also have developed 298 management plans covering more than 64,000 acres of privately owned wildlife habitat. This landowner assistance initiative, made possible with grant monies from the federal State Wildlife Grants Program and Landowner Incentive Program, both administered by the U.S. Fish and Wildlife Service, has the potential to be incredibly beneficial to many wildlife species, especially those in need of specialized management assistance.

Landowners with at least 20 acres, who have a genuine interest in conserving species of concern, such as great blue herons, Indiana bats, red-shouldered hawks and barn owls, are encouraged to contact the wildlife diversity biologist serving their county. After a short interview, the biologist will send the interested landowner an objective survey providing background information about the habitat found on the property and the landowner's wildlife management goals. After reviewing the survey, the biologist will then walk the property with the landowner and discuss how habitat types can be improved for species of concern and overall wildlife diversity. A detailed report with management recommendations based upon the biologist's findings and the landowner's management goals will be developed and sent to the landowner.

There is no charge for participating in the Private Landowner Assistance Program, nor is there a public access requirement. After receiving the management recommendations report, the landowner can contact the biologist with questions or for additional direction.

If you are interested in participating in this landowner program, please use the following listing to determine what region your property is found in and where to call for assistance:

Northwest: Butler, Clarion, Crawford, Erie, Forest, Jefferson, Lawrence, Mercer, Venango, Warren counties - RWD Biologist Tim Hoppe at 814-860-8123 or [thoppe@state.pa.us](mailto:thoppe@state.pa.us). Hoppe also can be reached through the Game Commission Northwest Region Office at 814-432-3187 or by mail to P.O. Box 31, Franklin, PA 16323.

Southwest: Allegheny, Armstrong, Beaver, Cambria, Fayette, Greene, Indiana, Somerset, Washington and Westmoreland counties - RWD Biologist Tammy Colt at 724-238-4064 or [tcolt@state.pa.us](mailto:tcolt@state.pa.us). Game Commission Southwest Region Office at 724-238-9523 or by mail to 4820 Route 711, Bolivar, PA 15923.

Northcentral: Cameron, Centre, Clearfield, Clinton, Elk, Lycoming, McKean, Potter, Tioga and Union counties - Region Office at 570-398-4744 or by mail to P.O. Box 5038, Jersey Shore, PA 17740.

Southcentral: Adams, Bedford, Blair, Cumberland, Franklin, Fulton, Huntingdon, Juniata, Mifflin, Perry and Snyder counties - RWD Biologist Jamie Zambo at [jzambo@state.pa.us](mailto:jzambo@state.pa.us). Zambo also can be reached through the Game Commission Southcentral Region Office at 814-643-1831 or mail to 8627 William Penn Highway, Huntingdon, PA 16652.

Northeast: Bradford, Carbon, Columbia, Lackawanna, Luzerne, Monroe, Montour, Northumberland, Pike, Sullivan, Susquehanna, Wayne and Wyoming counties - RWD Biologist Kevin Wenner at [kewenner@state.pa.us](mailto:kewenner@state.pa.us) or 570-788-8194. Wenner also can be reached through the Game Commission Northeast Region Office at 570-675-1143 or by mail to P.O. Box 220, Dallas, PA 18612.

Southeast: Berks, Bucks, Chester, Dauphin, Delaware, Lancaster, Lebanon, Lehigh, Montgomery, Northampton, Philadelphia, Schuylkill and York counties - RWD Biologist Dan Mummert at [dmummert@state.pa.us](mailto:dmummert@state.pa.us). Mummert also can be reached through the Game Commission Southeast Region Office by calling 610-926-3136 or mailing to 448 Snyder Road, Reading, PA 19605.

- Dan Mummert, PGC Wildlife Diversity Biologist, Southeast Region

## Hands-On Deer Trapping

FOR THE PAST seven years the Game Commission has been capturing and radio-collaring white-tailed deer as part of the deer research program. The capture of study animals is the initial step to a successful program, because all subsequent steps depend on the data obtained from these animals. As a biologist aide, I've been one of the lucky few to be involved with the deer trapping during this time. My deer trapping career began in May of 2000, when I worked as part of the team responsible for capturing and monitoring fawns in Centre County for the fawn study. My work continued through the buck and doe studies until April 2006. Following are some of my trapping experiences from the past seven seasons.

No single method is best for capturing white-tailed deer. As deer get older, capture techniques go from simple to complex and from easy to physically demanding. Most of the time fawns were fairly easy to catch, but there were times when catching one seemed to be nearly impossible. We caught most fawns by using a fishing net technique, in which we walked through fields, and after spotting a fawn, placed a fishing net over it. The nicest part about catching fawns was that most of the time these little spotted critters did what their instincts and mothers taught them: they remained motionless. All we had to do was slowly walk up to them and drop a large fishing net over them.

Once we caught a fawn, we would begin processing it. We took every precaution possible to avoid leaving human scent on the fawn and around the capture site. First we would cover its eyes to keep it calm. Using latex gloves, we would then take the fawn about 30 feet from the bedding site. After that we collected all the pertinent data we needed (capture location, sex, weight, and habitat type and neck circumference). We then placed numbered ear tags on the fawn and fitted it with a transmitter, on an expandable neck collar, that allowed us to track its movements and survival. We normally had fawns running free just 7 minutes after we initially captured it. (We captured and handled fawns because we were studying them for research. If you encounter a fawn in the wild, please do not handle it. Handling only increases the chances of a predator finding it or its mother abandoning it.)

Some days weren't so easy. There were days when we walked for miles in the summer heat with little to show for our effort. On other occasions we were faced with the challenging task of trying to run down week-old fawns. At times it seemed as though someone was guiding the fawns and having a lot of fun watching us miss. The result of these chases was often the "white wave" of the fawn's tail as it continued on its way.

Despite their small size, catching fawns could be hazardous to our health. One day, while searching in knee-high ferns, I jumped what we referred to as a "runner." The fawn took off at full speed and I was hot on its heels when it gracefully bounded over a concealed log.

Well, I wasn't as graceful. I hit the log shin high and did a summersault, landing flat on my back. When I got up all I could see was the fawn's white tail getting smaller and smaller. We never did catch that fawn, but during the 2-year study, we did catch 218 other fawns.

Next I worked on the Game Commission's buck ecology study, trapping 7-month and older deer. For this study - and the doe study - we used three main trapping methods: drop nets, rocket nets and Clover traps.

A drop net is a 70- x 70-foot net that is elevated off the ground by four 8-foot high corner posts in open fields. Each pole is similar to a volleyball net pole, with a winch to pull the net tight about six feet above the ground. We used corn to entice deer under the net. When the deer reached the center, we dropped the net on them with a remote control. The advantage of using a remote release is that we could watch the net from up to 150 yards away, thus minimizing the chances of being seen or, more importantly, smelled by the deer

Once the deer were captured, we started processing them. Like the fawns, the first thing we did was

quietly blindfold them. We then used immobilizing drugs to sedate the entangled deer. After sedating, we tagged and collected data from each deer. Once all the data were collected and deer were marked with ear tags and radio collars, we would disentangle the deer from the net. After freeing the deer from the net, we administered a drug to reverse the sedative and the deer were released.

We also used rocket nets, which are similar to the drop net, but use a different delivery method. These are 60- x 40-foot nets that are shot over deer feeding on bait. Three rockets - metal tubes filled with an explosive propellant - are electronically ignited and, when launched, pull the net into the air and over the deer. The advantage of this method is that deer do not have to walk under the net, like they do with a drop net. Rather, the net is lying on the ground near the bait, and deer may be more willing to come to the bait. Once the deer are captured, handling and tagging them proceeds in the same manner as drop nets.

The last method, Clover trapping, is by far the most intense thing I have ever done. The name Clover trap comes from the man who designed the trap more than 50 years ago. A Clover trap is a rectangular, metal framed, walk-in live trap, which has black nylon netting around the outside. It is roughly 4- x 3- x 6-foot in size. A hungry deer enters the front of the trap through a door held open by a trip-line. When the deer walks into the back of the trap it nudges the trip-line, dropping the door behind it.

We checked Clover traps early the morning after setting them. Processing the deer required a person to enter the trap with the deer and physically restrain it while another person tags it and records necessary data. With the Clover traps, we used physical restraint, rather than drugs, because we could tag and process a deer in less than 5 minutes. In this case, the short time spent handling the deer outweighed the longer time needed to allow drugs to sedate the deer.

This was my favorite way of trapping deer and, honestly, the main reason I kept coming back for more. It's hard to describe the adrenaline rush I felt right before entering the trap. Many who have seen us handle these deer say it's crazy. Maybe, but it's a lot of fun. The chance of getting injured while handling these deer is real, but that is part of the job. The closest call I ever had occurred last winter, while working on the Doe Survival Study.

As Sean Miller, a fellow biologist aide, and I approached our first trap that snowy morning I could tell right away it had a deer inside. She was big one, and extremely excited. As soon as I got to the door I knew I was going to have my hands full. As I opened the door the doe bounced off the back of the trap and came right back at me. I grabbed for whatever I could get my hands on. I had her - then I didn't. We went around in circles for awhile, as Sean asked, "Do you have her?" As I wrapped my arms around her, I noticed that in the excitement we had left the radio collar in the truck.

As Sean went back for the collar, I was finally able to get the deer under control. A minute or two later Sean was back with the collar, we began processing her, and everything seemed to be back on track. But the worst was coming.

When Sean finished putting the collar and ear tags on her it was time to let her run. He pulled her blindfold off, and I gave her a helping push out of the trap. The bad thing was, she wasn't ready to leave. This adult doe wanted revenge. She turned and ran back into the trap and pummeled me. All I could do was cover my face and wait for help. When the hair was done flying, I remember thinking, WOW, that hurt. I had a huge brush burn on my forehead and bruises on both arms and legs, and I could tell from Sean's face that it must have looked pretty bad.

Over the years I've received many questions about what we do. The most common one is "Do you hurt the deer you handle?" Anytime a wild animal is handled, there's a chance for injury or even death. Handling animals, however, is a necessary part of wildlife research; it's the only way we can learn about their ecology and behavior. We take every precaution we can to minimize injuries. And while injuries and some mortality did occur due to trapping, I am proud to say that over the past five years, while we captured and handled more than 2,000 deer, we had one of the lowest trapping

mortality rates ever recorded on any deer study in North America. This is a testament to the capture protocols and the personnel involved. Again, though, I'd like to reiterate: With the exception of research, wild animals should not be handled, partly because of the possibility of abandonment.

I sincerely thank Dr. Duane Diefenbach, Dr. Chris Rosenberry, Dr. Eric Long, Bret Wallingford, Justin and Wendy Vreeland and Matt Keenan for making these past few years very enjoyable with lots of memories.

- *Andrew J. Torick, PGC Biologist Aide*